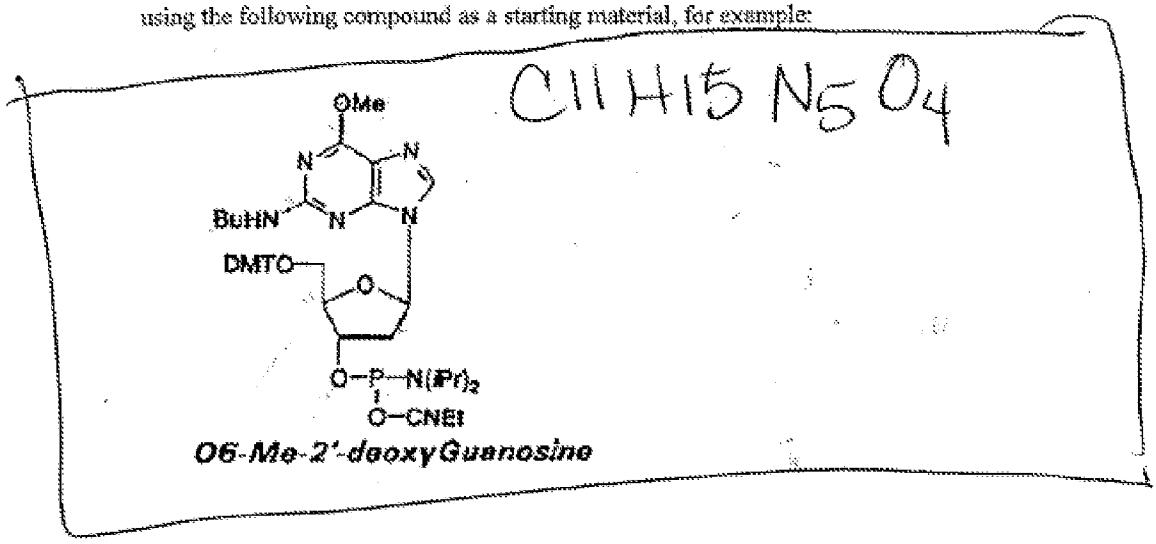
order to obtain a polynucleotide derivative that is stable in cells, a base, a sugar, and a phosphoric acid portion may chemically be modified. Examples of the aforementioned polynucleotide synthesis method may include the phosphate triester method, the phosphoramidite method, and the H-phosphonate method.

A polynucleotide wherein guanosine is methylated at position 6 may be produced using the following compound as a starting material, for example:



(Pharmaceutical composition for preventing or treating immune-mediated diseases)

As described later in test examples of the present specification, it has been confirmed that the polynucleotide of the present invention comprising a CpG motif wherein guanine is methylated can suppress the generation of interleukin when a mouse bone marrow-derived macrophage is stimulated with CpG DNA or the like, and that it can also suppresses arthritis in type II collagen arthritis model mice. That is to say, the present invention provides a pharmaceutical composition comprising, as an active ingredient, a polynucleotide having a CpG motif wherein guanine is methylated. The pharmaceutical composition of the present invention has action to suppress immunity, and thus, it can be used for preventing and/or treating immune-mediated diseases. The pharmaceutical composition of the present invention can be used for preventing and/or treating autoimmune diseases such as articular rheumatism, systemic lupus erythematosus,

STRUCTURE SEARCH-PT.I

=> FILE REG
FILE 'REGISTRY' ENTERED AT 17:33:28 ON 19 APR 2010

Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES: 18 APR 2010 HIGHEST RN 1219538-51-8
DICTIONARY FILE UPDATES: 18 APR 2010 HIGHEST RN 1219538-51-8

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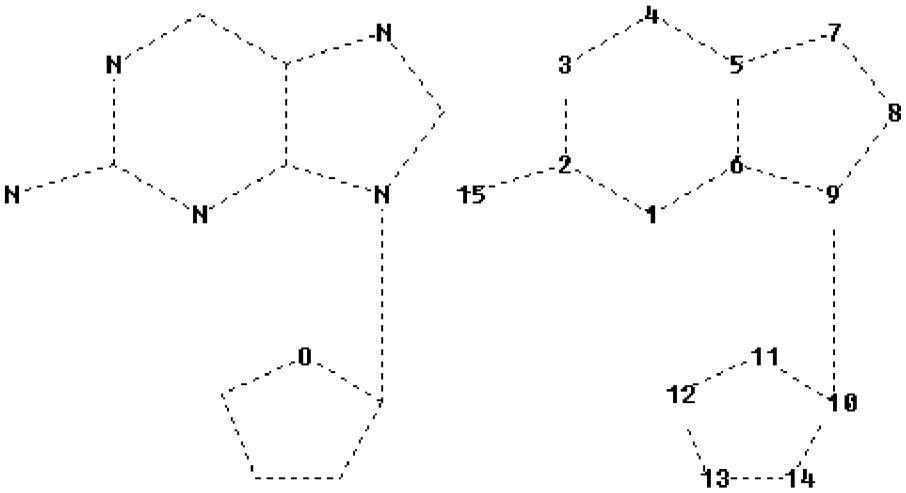
TSCA INFORMATION NOW CURRENT THROUGH January 8, 2010.

Please note that search-term pricing does apply when
conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document. For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

Uploading LL8.str



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15
ring nodes :
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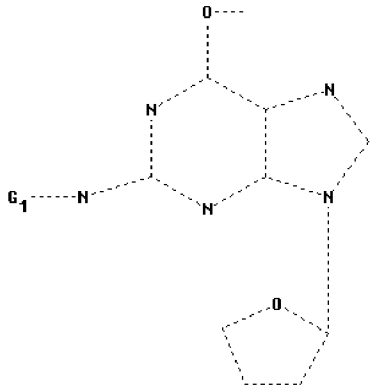
chain bonds :
2-15 9-10
ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9 10-11 10-14 11-12 12-13 13-14

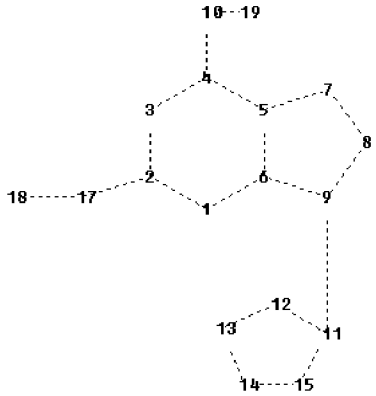
exact/norm bonds :

1-2 1-6 2-3 2-15 3-4 4-5 5-6 5-7 6-9 7-8 8-9 9-10 10-11 10-14 11-12
12-13 13-14

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:CLASS

Uploading LL15.str





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ring nodes :
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exact/norm bonds :
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11-15 12-13 13-14 14-15 17-18

G1:n-Bu,i-Bu,s-Bu,t-Bu

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:CLASS
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 17:CLASS 18:CLASS 19:CLASS

=> FILE HCAPLUS
FILE 'HCAPLUS' ENTERED AT 17:33:32 ON 19 APR 2010
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 19 Apr 2010 VOL 152 ISS 17
FILE LAST UPDATED: 18 Apr 2010 (20100418/ED)
REVISED CLASS FIELDS (/NCL) LAST RELOADED: Feb 2010
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Feb 2010

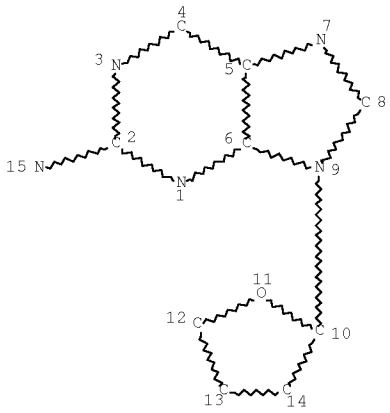
HCAplus now includes complete International Patent Classification (IPC) reclassification data for the first quarter of 2010.

CAS Information Use Policies apply and are available at:

http://www.cas.org/legal/infopolicy.html

This file contains CAS Registry Numbers for easy and accurate substance identification.
'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> D STAT QUE L20
L8 STR



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DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  15

STEREO ATTRIBUTES: NONE
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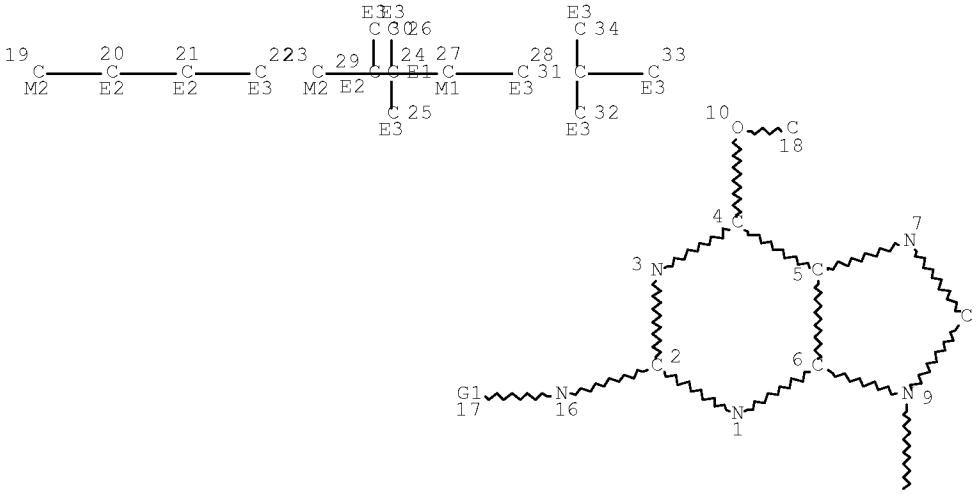

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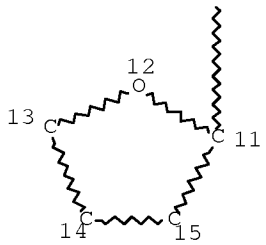
Page 1-B



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          33 34
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  34

STEREO ATTRIBUTES: NONE
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L20           8 SEA FILE=HCAPLUS SPE=ON  ABB=ON  PLU=ON  L17


=> D L20 IBIB ABS HITSTR 1-8

L20  ANSWER 1 OF 8  HCAPLUS  COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER:        2008:61080  HCAPLUS  Full-text
DOCUMENT NUMBER:         150:5994
TITLE:                   Studies on DNA dynamics using
                         2-N-tert-butylaminoxylpurines
AUTHOR(S):               Aso, Mariko; Mirc, John Walter; Kurita, Manami; Koga,
                         Noboru; Suemune, Hiroshi
CORPORATE SOURCE:        Graduate School of Pharmaceutical Sciences, Kyushu
                         University, Maidashi, Higashi-ku, Fukuoka, 812-8582,
```

Japan
SOURCE: Nucleic Acids Symposium Series (2007), (51), 163-164
CODEN: NASSCJ; ISSN: 1746-8272
URL: http://nass.oxfordjournals.org/content/vol51/issue1/index.dtl
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal; (online computer file)
LANGUAGE: English
OTHER SOURCE(S): CASREACT 150:5994
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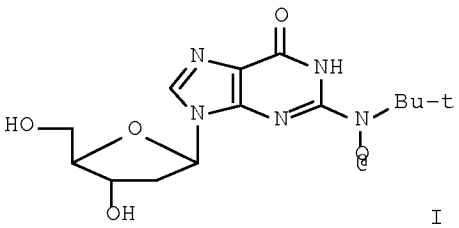

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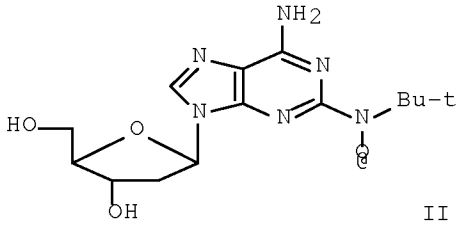

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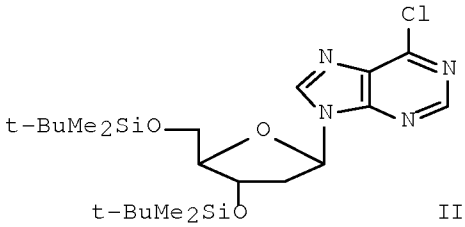


III

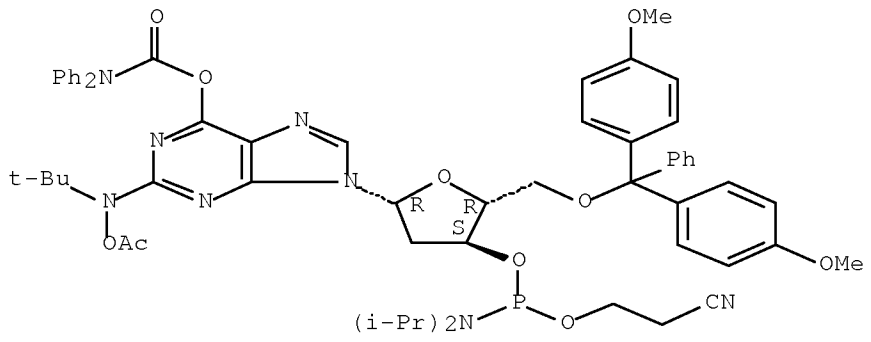
AB A symposium report. 2-N-tert-Butylaminoxylpurines I and II were synthesized from 2'-deoxy-6-chloropurine derivative III by lithiation strategy. Effects of motion of I and II on EPR spectra were studied by EPR measurement in sucrose solution at various temps. The single stranded and duplexed 15-mers containing I showed the clear difference in the EPR spectra to indicate I has the potential to accurately study the dynamics of purine residues.

IT 1083322-84-2P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation of tert-butylaminoxylpurines, EPR spectra, incorporation into DNA and subsequent duplex formation)

RN 1083322-84-2 HCAPLUS

CN Guanosine, N-(acetyloxy)-5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-N-(1,1-dimethylethyl)-, 3'-[2-cyanoethyl N,N-bis(1-methylethyl)phosphoramidite] 6-(N,N-diphenylcarbamate) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:1106792 HCAPLUS Full-text
DOCUMENT NUMBER: 143:379802
TITLE: Antisense oligonucleotides modulating transcription factor AP-2γ (TFAP2C) expression for treatment of proliferative diseases and cancer
INVENTOR(S): Bennett, C. Frank; Baker, Brenda F.; Dean, Nicholas M.; Monia, Brett P.; Freier, Susan M.; Karras, James G.; Zhang, Hong; Murray, Susan F.; Butler, Madeline M.; Koller, Erich; Condon, Thomas P.; Gaarde, William A.; Watt, Andrew T.; Graham, Mark J.; Wyatt, Jacqueline R.; Cowsert, Lex M.; Dobie, Kenneth W.; Roach, Mark P.
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 46 pp., Cont.-in-part of U.S. Ser. No. 33,742.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 326
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20050227938	A1	20051013	US 2004-15193	20041217
AU 9726244	A	19971106	AU 1997-26244	19970624
AU 713740	B2	19991209		
US 6007995	A	19991228	US 1998-106038	19980626
US 6232463	B1	20010515	US 1998-128508	19980804
WO 2000000504	A1	20000106	WO 1999-US13763	19990617
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 20030044979	A1	20030306	US 2001-828344	20010405
US 20030083279	A1	20030501	US 2001-910185	20010718
US 20030109466	A1	20030612	US 2001-961001	20010920
US 20030100524	A1	20030529	US 2001-16149	20011101

US 20030125274	A1	20030703	US 2001-6911		20011108
US 20030105040	A1	20030605	US 2001-993731		20011113
US 20030125271	A1	20030703	US 2001-213		20011114
US 20030109467	A1	20030612	US 2001-2491		20011115
US 20030105041	A1	20030605	US 2001-1844		20011116
US 20030125272	A1	20030703	US 2001-1863		20011119
US 20030139359	A1	20030724	US 2001-6972		20011204
US 20030114400	A1	20030619	US 2001-3354		20011206
US 20030114401	A1	20030619	US 2001-3919		20011206
US 20030138952	A1	20030724	US 2001-17621		20011207
US 20030113914	A1	20030619	US 2001-6430		20011210
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US 20030147863	A1	20030807	US 2001-23782		20011217
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			US 2000-695451	B2	20001024
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			US 2001-910185	B2	20010718
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			US 2001-1863	A2	20011119
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			US 2001-23782	B2	20011217
			US 2001-24369	B2	20011217
			US 2001-33742	A2	20011228
			AU 1993-38025	A3	19930225
			US 1997-948151	A1	19971009

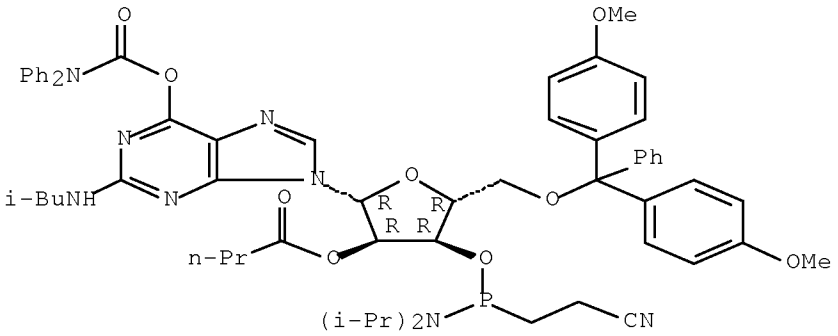
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB Antisense compds., compns. and methods are provided for modulating the expression of transcription factor AP-2γ (TFAP2C) . The compns. comprise antisense compds., particularly antisense oligonucleotides, targeted to nucleic acids encoding TFAP2C. Antisense oligonucleotides were designed targeting different regions of the TFAP2C mRNA sequence and may be modified to contain phosphorothioate linkages, 2'-O-methoxyethyl sugar moiety, and 5-methylcytosine bases. The chimeric phosphorothioate antisense oligonucleotides have 2'-MOE wings and a deoxy gap. The invention provides methods for synthesis of the antisense oligonucleotides. The antisense oligonucleotides demonstrated up to 91% inhibition of human TFAP2C expression. Methods of using these compds. for modulation of TFAP2C expression and for treatment of diseases associated with expression of TFAP2C are provided.

IT 1056984-88-3 1056984-89-4
RL: PRPH (Prophetic)
(Antisense oligonucleotides modulating transcription factor AP-2γ (TFAP2C) expression for treatment of proliferative diseases and cancer)

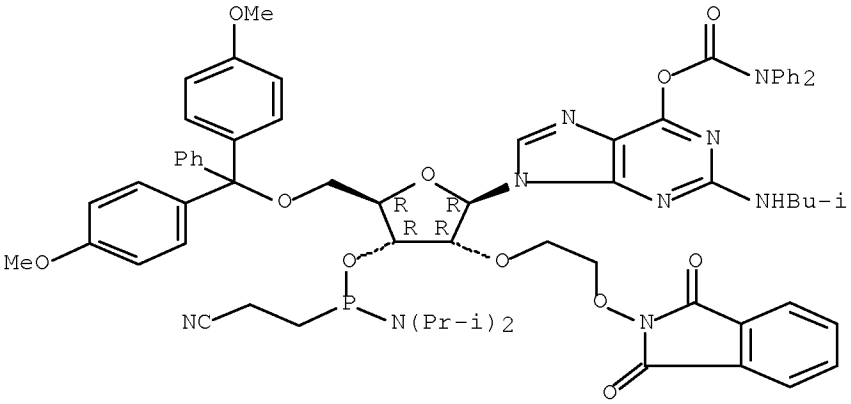
RN 1056984-88-3 HCAPLUS
CN INDEX NAME NOT YET ASSIGNED

Absolute stereochemistry.



RN 1056984-89-4 HCAPLUS
CN INDEX NAME NOT YET ASSIGNED

Absolute stereochemistry.



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

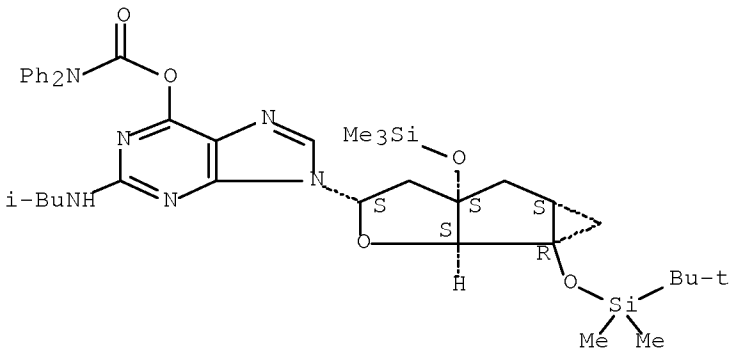
L20 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2002:337381 HCAPLUS Full-text
DOCUMENT NUMBER: 137:105289
TITLE: Watson-Crick Base-Pairing Properties of Tricyclo-DNA
AUTHOR(S): Renneberg, Dorte; Leumann, Christian J.
CORPORATE SOURCE: Department of Chemistry and Biochemistry, University of Bern, Bern, CH-3012, Switz.
SOURCE: Journal of the American Chemical Society (2002), 124(21), 5993-6002
CODEN: JACSAT; ISSN: 0002-7863
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 137:105289
AB Tricyclo-DNA belongs to the family of conformationally restricted oligodeoxynucleotide analogs. It differs structurally from DNA by an addnl. ethylene bridge between the centers C(3') and C(5') of the nucleosides, to which a cyclopropane unit is fused for further enhancement of structural rigidity. The synthesis of the hitherto unknown tricyclodeoxynucleosides containing the bases

cytosine and guanine and of the corresponding phosphoramidite building blocks is described, as well as a structural description of a representative of an α- and a β-tricyclodeoxynucleoside by x-ray anal. Tricyclodeoxynucleoside building blocks of all four bases were used for the synthesis of fully modified mixed-base oligonucleotides. Their Watson-Crick pairing properties with complementary DNA, RNA, and with itself were investigated by UV melting curves, CD spectroscopy, and mol. modeling. Tricyclo-DNA was found to be a very stable Watson-Crick base-pairing system. A UV melting curve anal. of the decamers tcd(pcgtgacagtt) and tcd(paactgtcacg) showed increased thermal stabilities of up to ΔTm/mod. = +1.2° with complementary DNA and +2.4° with complementary RNA. With itself, tricyclo-DNA showed an increase in stability of +3.1°/base pair relative to DNA. Investigations into the thermodn. properties of these decamers revealed an entropic stabilization and an enthalpic destabilization for the tricyclo-DNA/DNA duplexes. CD spectroscopic structural investigations indicated that tricyclo-DNA containing duplexes preferably exist in an A-conformation, a fact which is in agreement with results from mol. modeling.

IT 440115-29-7P 440115-33-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(tricyclo-DNA forms Watson-Crick base-pairs and shows enhanced thermal stability)

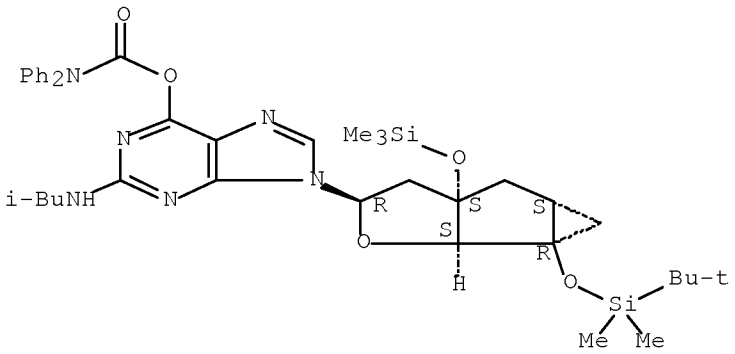
RN 440115-29-7 HCAPLUS
CN Carbamic acid, diphenyl-, 9-[(2S,3aS,4aS,5aR,5bS)-5a-[[(1,1-dimethylethyl)dimethylsilyl]oxy]octahydro-3a-[(trimethylsilyl)oxy]cyclopropa[4,5]cyclopenta[1,2-b]furan-2-yl]-2-[(2-methylpropyl)amino]-9H-purin-6-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RN 440115-33-3 HCAPLUS
CN Carbamic acid, diphenyl-, 9-[(2R,3aS,4aS,5aR,5bS)-5a-[[(1,1-dimethylethyl)dimethylsilyl]oxy]octahydro-3a-[(trimethylsilyl)oxy]cyclopropa[4,5]cyclopenta[1,2-b]furan-2-yl]-2-[(2-methylpropyl)amino]-9H-purin-6-yl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 48 THERE ARE 48 CAPLUS RECORDS THAT CITE THIS RECORD (48 CITINGS)
REFERENCE COUNT: 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2001:614293 HCAPLUS Full-text
DOCUMENT NUMBER: 135:190437
TITLE: Antisense oligonucleotide modulation of Her-3 gene expression
INVENTOR(S): Bennett, C. Frank; Cowsert, Lex M.
PATENT ASSIGNEE(S): Isis Pharmaceuticals, Inc., USA
SOURCE: U.S., 49 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 6277640	B1	20010821	US 2000-630706	20000731
WO 2002010409	A1	20020207	WO 2001-US22751	20010718
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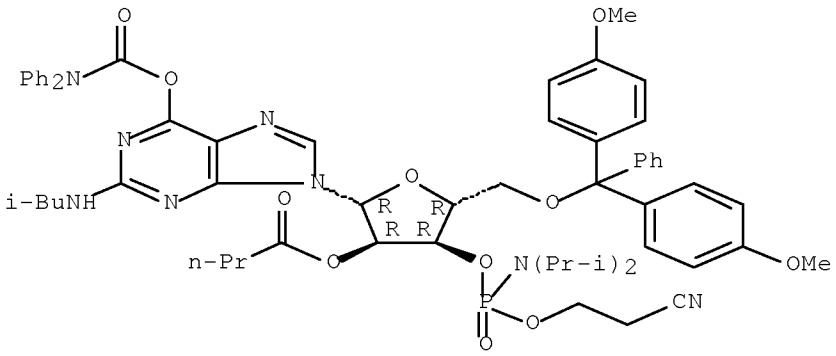
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
AU 2001077003	A	20020213	AU 2001-77003	20010718

PRIORITY APPLN. INFO.: US 2000-630706 A 20000731
WO 2001-US22751 W 20010718
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
AB Antisense compds., compns. and methods are provided for inhibiting the expression of Her-3 protein of human. The compns. comprise antisense compds., particularly antisense oligonucleotides, targeted to nucleic acids encoding Her-3. Methods of using these compds. for inhibition of Her-3 expression and for treatment of diseases associated with expression of Her-3 are provided.
IT 1098518-67-2
RL: PRPH (Prophetic)
(Antisense oligonucleotide modulation of Her-3 gene expression)

RN 1098518-67-2 HCAPLUS
CN INDEX NAME NOT YET ASSIGNED

Absolute stereochemistry.



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)
REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2000:252686 HCAPLUS Full-text
DOCUMENT NUMBER: 133:74242
TITLE: Chemical Synthesis of Cross-Link Lesions Found in Nitrous Acid Treated DNA: A General Method for the Preparation of N2-Substituted 2'-Deoxyguanosines
AUTHOR(S): Harwood, Eric A.; Hopkins, Paul B.; Sigurdsson, Snorri Th.
CORPORATE SOURCE: Department of Chemistry, University of Washington, Seattle, WA, 98195, USA
SOURCE: Journal of Organic Chemistry (2000), 65(10), 2959-2964 CODEN: JOCEAH; ISSN: 0022-3263
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 133:74242
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Treatment of DNA with nitrous acid results in the formation of DNA-DNA cross-links. Two cross-link lesions have previously been isolated and their structures assigned based on spectroscopic data. The major lesion has been proposed to consist of two deoxyguanosine (dG) nucleosides sharing a common N2 atom I, while the structure of the minor lesion has been proposed to consist of a common nitrogen atom linking C2 of a dG nucleoside to C6 of deoxyadenosine II. The chemical synthesis of I and II, utilizing a palladium-catalyzed coupling, is described herein. It is demonstrated that the spectroscopic properties of synthetic I are identical to that of lesion I obtained from nitrous acid cross-linked DNA, thus providing a proof of its structure. Comparison of the limited spectroscopic data available for lesion II originating from nitrous acid cross-linked DNA to synthetic II supports its

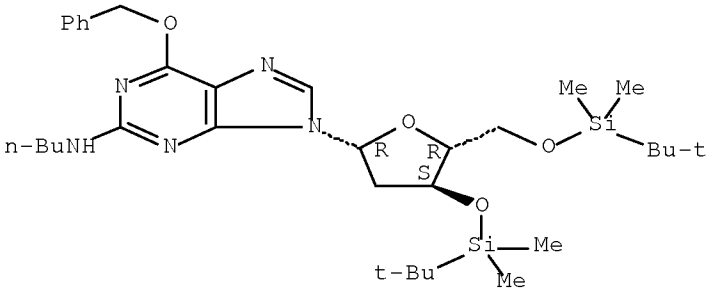
structural assignment. The synthetic approach used for synthesis of I and II is shown to be a general method for the preparation of a variety of N2-substituted dG nucleosides in good yields.

IT 278803-37-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of N2-substituted 2'-deoxyguanosines cross-link lesions found in nitrous acid treated DNA)

RN 278803-37-5 HCAPLUS

CN Guanosine, N-butyl-2'-deoxy-3',5'-bis-O-[(1,1-dimethylethyl)dimethylsilyl]-6-O-(phenylmethyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 42 THERE ARE 42 CAPLUS RECORDS THAT CITE THIS RECORD (42 CITINGS)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1996:54407 HCAPLUS Full-text

DOCUMENT NUMBER: 124:139500

ORIGINAL REFERENCE NO.: 124:25787a,25790a

TITLE: Inhibition of HIV-1 RNase H activity by nucleotide dimers and monomers

AUTHOR(S): Allen, S. J. W.; Krawczyk, S. H.; McGee, L. R.; Bischofberger, N.; Mulato, A. S.; Cherrington, J. M.

CORPORATE SOURCE: Gilead Sciences, Inc., Foster City, CA, 94404, USA

SOURCE: Antiviral Chemistry & Chemotherapy (1996), 7(1), 37-45
CODEN: ACCHEH; ISSN: 0956-3202

PUBLISHER: Blackwell

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Nucleotide dimers and monomers were shown to inhibit human immunodeficiency virus type 1 (HIV) RNase H activity. Several effective inhibitors were identified and placed into three general groups based on biochem. characterization of their inhibition. The first group (group A) inhibited HIV RNase H and the closely related feline immunodeficiency virus (FIV) RNase H, but did not inhibit less related retroviral or cellular RNases H or HIV reverse transcriptase (RT). The second group (group B) inhibited the RNase H activity of several retroviruses as well as the reverse transcriptase function of HIV RT. The third group (group C) inhibited RNases H from retroviral and cellular sources but did not inhibit HIV RT. Kinetic analyses of HIV RNase H inhibition were conducted and all three types of inhibitors exhibited a competitive mode of inhibition with regard to substrate. The small nucleotides described here represent the most potent (Ki values from 0.57 to 16 μM) and selective inhibitors of HIV RNase H reported to date. Further structure -

function analyses of these mols. may lead to the discovery of unique, potent antiretroviral therapeutics.

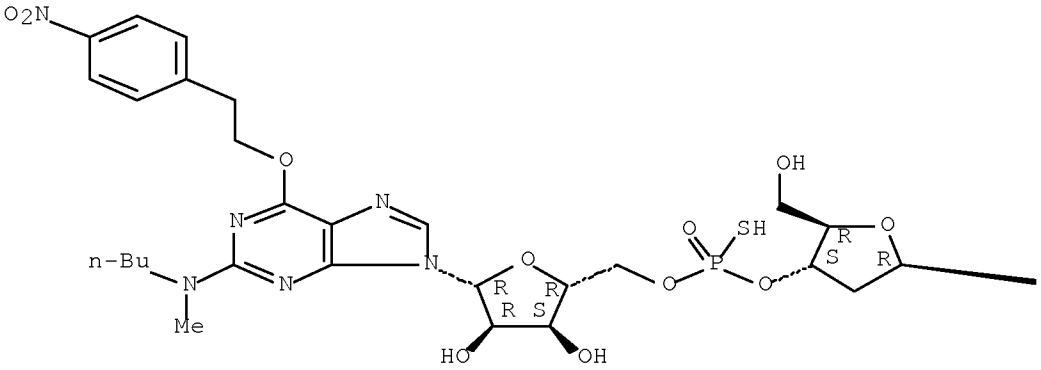
IT 173291-39-9 173291-41-3 173291-44-6
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); BIOL (Biological study)
(inhibition of HIV-1 RNase H activity by nucleotide dimers and monomers)

RN 173291-39-9 HCAPLUS

CN Guanosine, 2'-deoxy-P-thioadenylyl-(3'→5')-N-butyl-N-methyl-6-O-[2-(4-nitrophenyl)ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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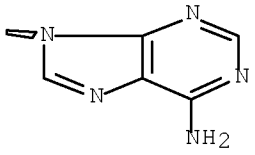
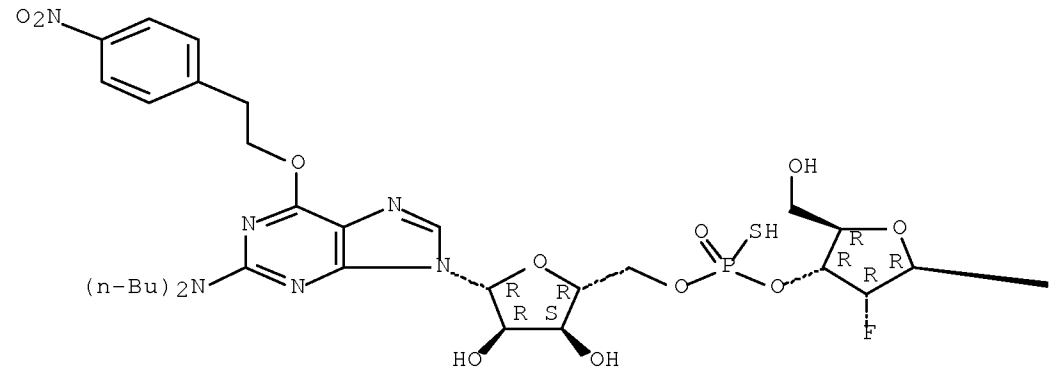


RN 173291-41-3 HCAPLUS

CN Guanosine, 2'-deoxy-2'-fluoro-P-thioadenylyl-(3'→5')-N,N-dibutyl-6-O-[2-(4-nitrophenyl)ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

PAGE 1-A



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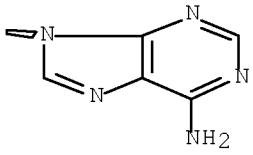
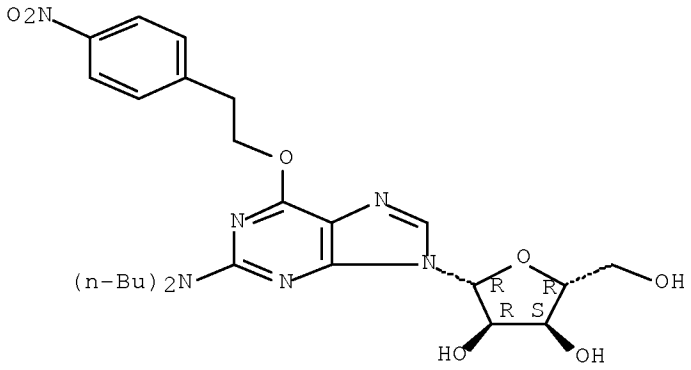


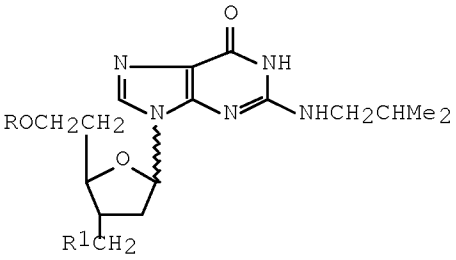
RN 173291-44-6 HCAPLUS
CN Guanosine, N,N-dibutyl-6-O-[2-(4-nitrophenyl)ethyl]- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 11 THERE ARE 11 CAPLUS RECORDS THAT CITE THIS RECORD (11 CITINGS)

L20 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1993:60029 HCAPLUS Full-text
DOCUMENT NUMBER: 118:60029
ORIGINAL REFERENCE NO.: 118:10787a,10790a
TITLE: Efficient regioselective synthesis of guanosine analogs
AUTHOR(S): Jenny, Thomas F.; Benner, Steven A.
CORPORATE SOURCE: Lab. Org. Chem., ETH, Zurich, CH-8092, Switz.
SOURCE: Tetrahedron Letters (1992), 33(44), 6619-20
CODEN: TELEAY; ISSN: 0040-4039
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 118:60029
GI



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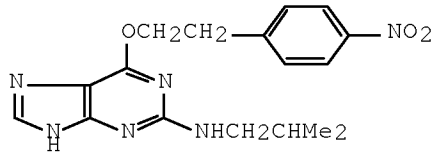


II

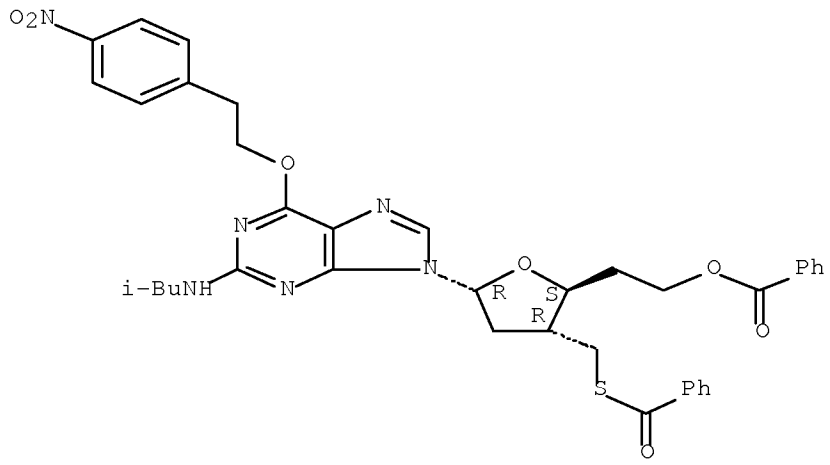
AB Reaction conditions are presented that allow regioselective introduction (N9 vs. N7) of guanine into sugar analogs under Vorbrueggen conditions. Using these conditions, a set of N2-protected guanosine analogs I (R = Bz, Ac; R1 = SBz, OBz, OAc) was prepared using isobutyryl[(nitrophenyl)ethyl]guanine II as the nucleophile. This approach helps solve an important synthetic problem in the preparation of guanosine analogs.

IT 145370-53-2P 145370-57-6P 145370-58-7P
145370-61-2P 145370-62-3P 145370-63-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and cleavage of nitrophenylethyl group of)

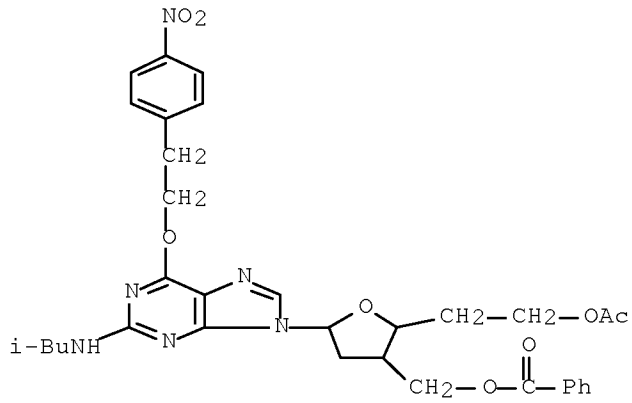
RN 145370-53-2 HCAPLUS

CN Benzenecarbothioic acid, S-[[2-[2-(benzoyloxy)ethyl]tetrahydro-5-[2-[(2-methylpropyl)amino]-6-[2-(4-nitrophenyl)ethoxy]-9H-purin-9-yl]-3-furanyl]methyl] ester, (2α,3β,5β)- (9CI) (CA INDEX NAME)

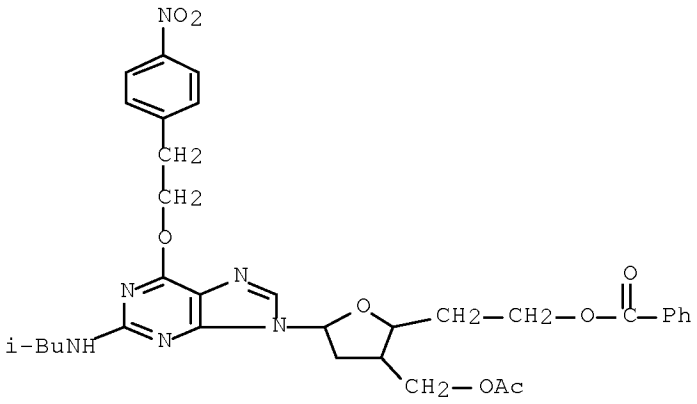
Relative stereochemistry.



RN 145370-57-6 HCAPLUS
CN 2-Furanethanol, 3-[(benzoyloxy)methyl]tetrahydro-5-[2-[(2-methylpropyl)amino]-6-[2-(4-nitrophenyl)ethoxy]-9H-purin-9-yl]-, acetate (ester), (2α,3β,5β)- (9CI) (CA INDEX NAME)

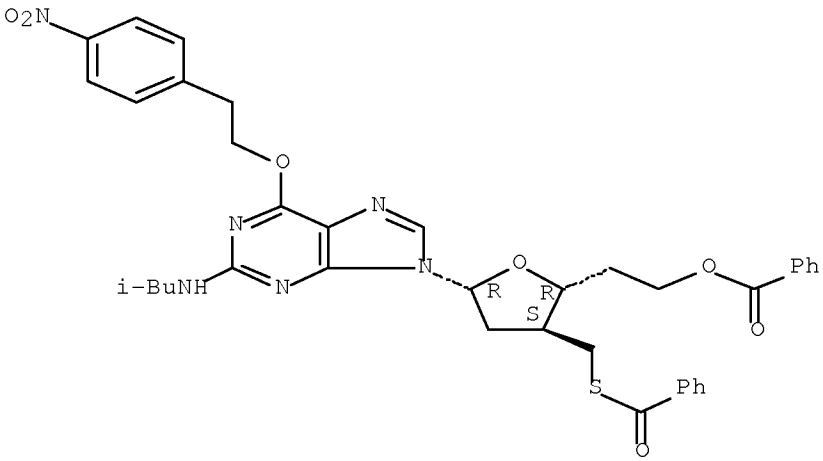


RN 145370-58-7 HCAPLUS
CN 2-Furanethanol, 3-[(acetyloxy)methyl]tetrahydro-5-[2-[(2-methylpropyl)amino]-6-[2-(4-nitrophenyl)ethoxy]-9H-purin-9-yl]-, benzoate (ester), (2α,3β,5β)- (9CI) (CA INDEX NAME)

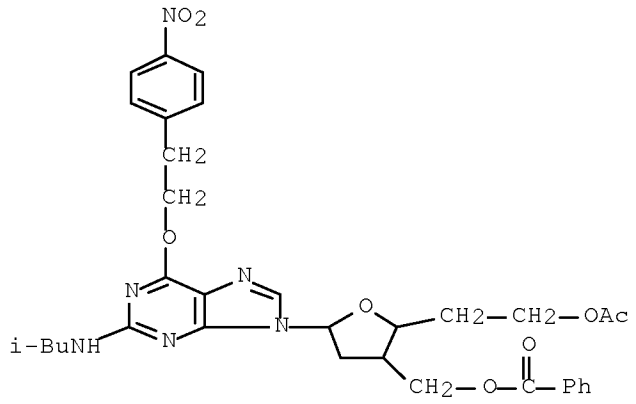


RN 145370-61-2 HCAPLUS
CN Benzenecarbothioic acid, S-[[2-[2-(benzoyloxy)ethyl]tetrahydro-5-[2-[(2-methylpropyl)amino]-6-[2-(4-nitrophenyl)ethoxy]-9H-purin-9-yl]-3-furanyl]methyl] ester, (2α,3β,5α)- (9CI) (CA INDEX NAME)

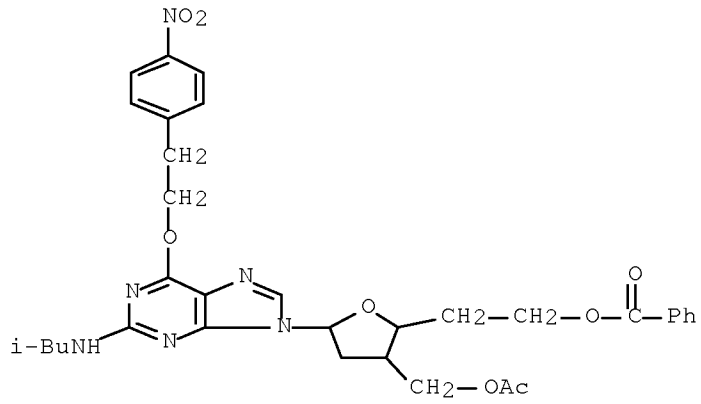
Relative stereochemistry.



RN 145370-62-3 HCAPLUS
CN 2-Furanethanol, 3-[(benzoyloxy)methyl]tetrahydro-5-[2-[(2-methylpropyl)amino]-6-[2-(4-nitrophenyl)ethoxy]-9H-purin-9-yl]-, acetate (ester), (2α,3β,5α)- (9CI) (CA INDEX NAME)



RN 145370-63-4 HCAPLUS
CN 2-Furanethanol, 3-[(acetyloxy)methyl]tetrahydro-5-[2-[(2-methylpropyl)amino]-6-[2-(4-nitrophenyl)ethoxy]-9H-purin-9-yl]-, benzoate (ester), (2α,3β,5α)- (9CI) (CA INDEX NAME)



OS.CITING REF COUNT: 15 THERE ARE 15 CAPLUS RECORDS THAT CITE THIS RECORD (15 CITINGS)

L20 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1989:528695 HCAPLUS Full-text
DOCUMENT NUMBER: 111:128695
ORIGINAL REFERENCE NO.: 111:21427a,21430a
TITLE: O6-substituted-2'-deoxyguanosine-3'-phosphate adducts detected by phosphorus-32 post-labeling of styrene oxide treated DNA
AUTHOR(S): Pongracz, K.; Kaur, S.; Burlingame, A. L.; Bodell, W. J.
CORPORATE SOURCE: Brain Tumor Res. Cent., Univ. California, San Francisco, CA, 94143, USA
SOURCE: Carcinogenesis (1989), 10(6), 1009-13
CODEN: CRNGDP; ISSN: 0143-3334
DOCUMENT TYPE: Journal
LANGUAGE: English

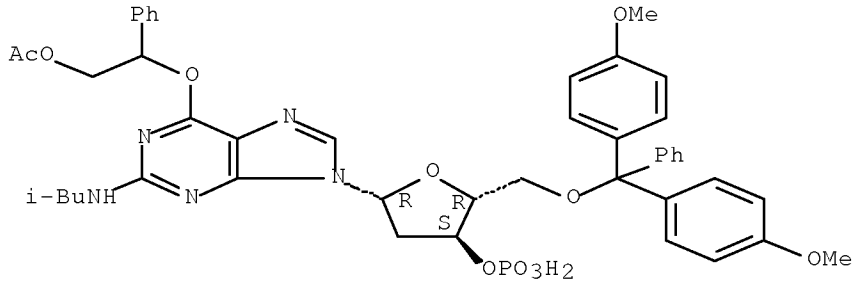
AB 32P post-labeling of DNA reacted with styrene oxide resulted in the detection of six adducts. To determine which of these corresponded to modification at the O6-position of guanine, O6-substituted styrene oxide-deoxyguanosine-3'-monophosphate derivs. were synthesized. The two synthetic isomers were purified by HPLC and the structures were confirmed by mass spectrometry and 1H NMR. 32P post-labeling and co-chromatog. with the DNA-styrene-7,8-oxide reaction products resulted in the assignment of 2 adducts as O6-(2-hydroxy-2-phenylethyl)-2'-deoxyguanosine-3',5'-bisphosphate and O6-(2-hydroxy-1-phenylethyl)-2'-deoxyguanosine-3',5'- bisphosphate.

IT 122219-71-0P 122219-72-1P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and hydrolysis of)

RN 122219-71-0 HCAPLUS

CN 3'-Guanylic acid, 6-O-[2-(acetyloxy)-1-phenylethyl]-5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-N-(2-methylpropyl)- (9CI) (CA INDEX NAME)

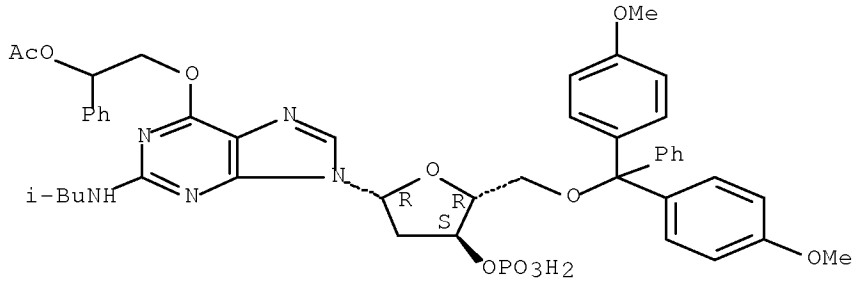
Absolute stereochemistry.



RN 122219-72-1 HCAPLUS

CN 3'-Guanylic acid, 6-O-[2-(acetyloxy)-2-phenylethyl]-5'-O-[bis(4-methoxyphenyl)phenylmethyl]-2'-deoxy-N-(2-methylpropyl)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 11 THERE ARE 11 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS)

STRUCTURE SEARCH-PT.II

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FILE 'REGISTRY' ENTERED AT 17:35:03 ON 19 APR 2010
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provided by InfoChem.

STRUCTURE FILE UPDATES:   18 APR 2010  HIGHEST RN 1219538-51-8
DICTIONARY FILE UPDATES:  18 APR 2010  HIGHEST RN 1219538-51-8

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REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

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                ANOSINE"/CN


=> D IDE CAN L19

L19  ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2010 ACS on STN
RN   964-21-6  REGISTRY
ED   Entered STN:  16 Nov 1984
CN   Guanosine, 2'-deoxy-6-O-methyl-  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   9H-Purine, 2-amino-9-(2-deoxy-β-D-erythro-pentofuranosyl)-6-methoxy-
     (8CI)
CN   9H-Purine, 2-amino-9-(2-deoxy-β-D-ribofuranosyl)-6-methoxy- (7CI)
OTHER NAMES:
CN   2'-Deoxy-6-methylguanosine
CN   2-Amino-6-methoxy-9-(2-deoxy-β-D-erythro-pentofuranosyl)purine
CN   6-O-Methyl-2'-deoxyguanosine
CN   6-O-Methyldeoxyguanosine
CN   O6-Methyl-2'-deoxyguanosine
CN   O6-Methyldeoxyguanosine
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LC   STN Files:   AGRICOLA, ANABSTR, BEILSTEIN*, BIOSIS, CA, CAPLUS, CASREACT,
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       USPATFULL
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Absolute stereochemistry.
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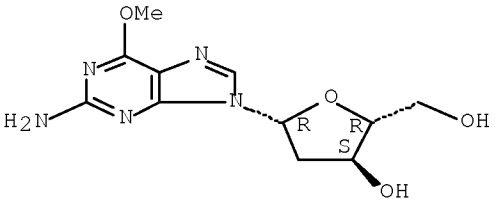

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152 REFERENCES IN FILE CA (1907 TO DATE)
6 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
152 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 152:254483

REFERENCE 2: 151:306603

REFERENCE 3: 148:71348

REFERENCE 4: 147:516635

REFERENCE 5: 146:310787

REFERENCE 6: 146:222036

REFERENCE 7: 146:206572

REFERENCE 8: 146:21366

REFERENCE 9: 144:462125

REFERENCE 10: 144:446191

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=> D STAT QUE L38

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L34	33522	SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON IMMUNOSTIMULATION+PFT/CT OR IMMUNOSTIM?/BI
L35	53933	SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON ANTISENS?/CT OR (ANTI(W)SENS? OR ANTISENS?)/BI
L36	152611	SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON OLIGONUCLEOTIDES+OLD,NT,PFT/CT OR OLIGONUCLEO?/BI
L37	18678	SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON (CPG? OR C(W)P(W)G?)/BI

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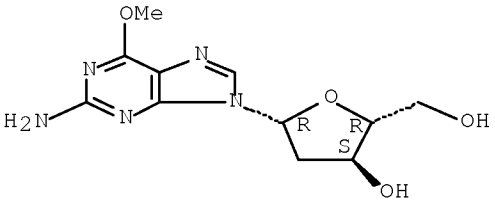
L38 ANSWER 1 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2009:996144 HCAPLUS Full-text
DOCUMENT NUMBER: 151:306603
TITLE: Cytosine Methylation Effects on the Repair of O6-Methylguanines within CG Dinucleotides
AUTHOR(S): Guza, Rebecca; Ma, Linan; Fang, Qingming; Pegg, Anthony E.; Tretyakova, Natalia
CORPORATE SOURCE: Department of Medicinal Chemistry, University of Minnesota, Minneapolis, MN, 55455, USA
SOURCE: Journal of Biological Chemistry (2009), 284(34), 22601-22610
CODEN: JBCHA3; ISSN: 0021-9258
PUBLISHER: American Society for Biochemistry and Molecular Biology
DOCUMENT TYPE: Journal
LANGUAGE: English

AB O6-Alkyldeoxyguanine adducts induced by tobacco-specific nitrosamines are repaired by O6-alkylguanine DNA alkyltransferase (AGT), which transfers the O6-alkyl group from the damaged base to a cysteine residue within the protein. In the present study, a mass spectrometry-based approach was used to analyze the effects of cytosine methylation on the kinetics of AGT repair of O6-methyldeoxyguanosine (O6-Me-dG) adducts placed within frequently mutated 5'-CG-3' dinucleotides of the p53 tumor suppressor gene. O6-Me-dG-containing DNA duplexes were incubated with human recombinant AGT protein, followed by rapid quenching, acid hydrolysis, and isotope dilution high-pressure liquid chromatog.-electrospray ionization tandem mass spectrometry anal. of unrepaired O6-methylguanine. Second-order rate consts. were calculated in the absence or presence of the C-5 Me group at neighboring cytosine residues. The kinetics of AGT-mediated repair of O6-Me-dG were affected by neighboring 5-methylcytosine (MeC) in a sequence-dependent manner. AGT repair of O6-Me-dG adducts placed within 5'-CG-3' dinucleotides of p53 codons 245 and 248 was hindered when MeC was present in both DNA strands. In contrast, cytosine methylation within p53 codon 158 slightly increased the rate of O6-Me-dG repair by AGT. The effects of MeC located immediately 5' and in the base paired position to O6-Me-dG were not additive as revealed by expts. with hypomethylated sequences. Furthermore, differences in dealkylation rates did not correlate with AGT protein affinity for cytosine-methylated and unmethylated DNA duplexes or with the rates of AGT-mediated nucleotide flipping, suggesting that MeC influences other kinetic steps involved in repair, e.g., the rate of alkyl transfer from DNA to AGT.

CC 4-6 (Toxicology)
IT Oligonucleotides
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(dinucleotides; cytosine methylation effects on repair of methylguanines within CG dinucleotides)
IT 964-21-6, O6-Methyldeoxyguanosine 77271-19-3, O6-Alkylguanine DNA alkyltransferase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(cytosine methylation effects on repair of methylguanines within CG dinucleotides)
IT 964-21-6, O6-Methyldeoxyguanosine
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(cytosine methylation effects on repair of methylguanines within CG dinucleotides)
RN 964-21-6 HCAPLUS
CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 48 THERE ARE 48 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 2 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2007:1087274 HCAPLUS Full-text
DOCUMENT NUMBER: 147:516635
TITLE: Model transition states for methane diazonium ion methylation of guanine runs in oligomeric DNA
AUTHOR(S): Ekanayake, Kaushalya S.; Lebreton, Pierre R.
CORPORATE SOURCE: Department of Chemistry, University of Illinois, Chicago, IL, 60607-7061, USA
SOURCE: Journal of Computational Chemistry (2007), 28(14), 2352-2365
CODEN: JCCHDD; ISSN: 0192-8651
PUBLISHER: John Wiley & Sons, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The DNA reaction pattern of the methane diazonium ion, which is the reactive intermediate formed from several carcinogenic methylating agents, was examined at N7 and O6 sites in guanine runs occurring in oligonucleotides and model oligonucleotides. D. functional B3LYP/6-31G*, and SCF 3-21G and STO-3G energies of model transition states were calculated in the gas phase and in the CPCM reaction field. For nucleotides containing two, three, and four stacked guanines with counterions in the gas phase, O6 reactivity is greater than N7 reactivity. In the reaction field, N7 reactivity is 9.0 to 9.8 times greater than O6 reactivity. For a double-stranded oligonucleotide containing two stacked guanines with counterions in the reaction field, the N7 and O6 reactivities of the 3'-guanine are 3.9 times greater than the corresponding sites in the 5'-guanine. For double-stranded oligonucleotides with three or four stacked guanines and counterions, the reactivities of the interior guanines are higher than corresponding reactivities of guanines at the ends. These reaction patterns agree with most of the available exptl. data. Activation energy decomposition anal. for gas-phase reactions in a double-stranded dinucleotide containing two stacked guanines with counterions indicates that selectivity at O6 is almost entirely due to electrostatic forces. Selectivity at N7 also has a large electrostatic interaction. However, the orbital interaction also contributes significantly to the gas-phase selectivity, accounting for 32% of the total interaction energy difference between the 3'- and 5'-guanine reactions. In aqueous solution, the relative orbital contribution to N7 selectivity is likely to be larger.

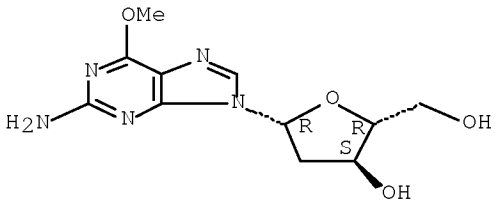
CC 6-2 (General Biochemistry)
IT DNA
Oligodeoxyribonucleotides
RL: BSU (Biological study, unclassified); RCT (Reactant); BIOL (Biological study); RACT (Reactant or reagent)
(model transition states for methane diazonium ion methylation of guanine runs in oligomeric DNA)
IT 964-21-6, O6-Methyl 2'-deoxyguanosine 26718-69-4, N7-Methyl

2'-deoxyguanosine
RL: BSU (Biological study, unclassified); FMU (Formation, unclassified); BIOL (Biological study); FORM (Formation, nonpreparative)
(model transition states for methane diazonium ion methylation of guanine runs in oligomeric DNA)

IT 964-21-6, O6-Methyl 2'-deoxyguanosine
RL: BSU (Biological study, unclassified); FMU (Formation, unclassified); BIOL (Biological study); FORM (Formation, nonpreparative)
(model transition states for methane diazonium ion methylation of guanine runs in oligomeric DNA)

RN 964-21-6 HCAPLUS
CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 63 THERE ARE 63 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 3 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2006:1349025 HCAPLUS Full-text
DOCUMENT NUMBER: 146:222036
TITLE: Development of a novel site-specific mutagenesis assay using MALDI-ToF MS (SSMA-MS)
AUTHOR(S): McLuckie, Keith I. E.; Lamb, John H.; Sandhu, Jatinderpal K.; Pearson, Helen L.; Brown, Karen; Farmer, Peter B.; Jones, Donald J. L.
CORPORATE SOURCE: The Biocentre, Cancer Biomarkers and Prevention Group, University of Leicester, Leicester, LE1 7RH, UK
SOURCE: Nucleic Acids Research (2006), 34(22), e150/1-e150/12
CODEN: NARHAD; ISSN: 0305-1048
PUBLISHER: Oxford University Press
DOCUMENT TYPE: Journal
LANGUAGE: English

AB We have developed and validated a novel site-specific mutagenesis assay, termed SSMA-MS, which incorporates MALDI-ToF mass spectrometry (MALDI-MS) anal. as a means of determining the mutations induced by a single DNA adduct. The assay involves ligating an adducted deoxyoligonucleotide into supF containing pSP189 plasmid. The plasmid is transfected into human Ad293 kidney cells allowing replication and therefore repair or a mutagenic event to occur. Escherichia coli indicator bacteria are transformed with recovered plasmid and plasmids containing the insert are identified colorimetrically, as they behave as frameshift mutations. The plasmid is then amplified and digested using a restriction cocktail of Mbo11 and Mnl1 to yield 12 bp deoxyoligonucleotides, which are characterized by MALDI-MS. MALDI-MS takes advantage of the difference in mol. weight between bases to identify any induced mutations. This anal. method therefore provides qual. and quant. information regarding the type and frequency of mutations induced. This assay was developed and validated using an O6-methyl-2'-deoxyguanosine adduct, which induced the expected GC AT substitutions, when replicated in human or bacterial cells. This approach can be

applied to the study of any DNA adduct in any biol. relevant gene sequence (e.g. p53) in human cells and would be particularly amenable to high-throughput anal.

CC 3-1 (Biochemical Genetics)

IT Oligonucleotides
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(adduct-containing; development of novel site-specific mutagenesis assay using MALDI-ToF MS (SSMA-MS))

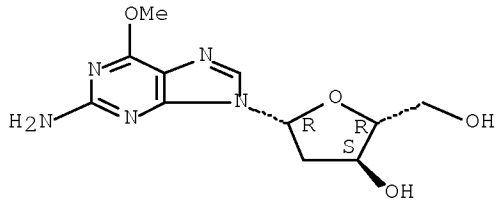
IT 964-21-6, O6-Methyl-2'-deoxyguanosine
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(mutagenesis induced by; development of novel site-specific mutagenesis assay using MALDI-ToF MS (SSMA-MS))

IT 964-21-6, O6-Methyl-2'-deoxyguanosine
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(mutagenesis induced by; development of novel site-specific mutagenesis assay using MALDI-ToF MS (SSMA-MS))

RN 964-21-6 HCAPLUS

CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 4 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2006:412032 HCAPLUS Full-text

DOCUMENT NUMBER: 144:446191

TITLE: Nucleic acid analysis by uses of mass labeled identification oligonucleotides and their capture for subsequent identification by mass spectrometry

INVENTOR(S): Grosveld, Franklin; Philipsen, Jacobus

PATENT ASSIGNEE(S): Erasmus University Medical Center, Neth.

SOURCE: PCT Int. Appl., 53 pp.
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2006046144	A2	20060504	WO 2005-IB3513	20051026
WO 2006046144	A3	20061123		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN,

YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: GB 2004-23873 A 20041027

AB Described is a method for analyzing nucleic acid isolated from or in a biol. sample through the use of mass labeled identification oligonucleotides and their capture for subsequent identification by mass spectrometry. The method comprises the steps of hybridizing to the nucleic acid(s) under desired conditions in solution containing a repertoire of identification oligonucleotides, each of defined and different mass; capturing the nucleic acid onto a solid phase and washing off those members of the repertoire which are not hybridized to the nucleic acid with a desired affinity; and eluting the repertoire members which remain hybridized to nucleic acid after the washing step and analyzing said members to resolve their mass and/or quantity. The invention is of particular value for the simultaneous resolution of complex mixts. of oligonucleotides of similar or identical mass but different nucleotide sequence.

IC ICM C12N

CC 3-1 (Biochemical Genetics)
Section cross-reference(s): 9

ST target nucleic acid hybridization mass labeled identification oligonucleotide; mass spectrometry identification oligonucleotide nucleic acid hybridization

IT Mass spectrometry
(Fourier-transform; nucleic acid anal. by uses of mass labeled identification oligonucleotides and their capture for subsequent identification by mass spectrometry)

IT Time-of-flight mass spectrometry
(matrix-assisted photodesorption-photoionization; nucleic acid anal. by uses of mass labeled identification oligonucleotides and their capture for subsequent identification by mass spectrometry)

IT Oligonucleotides
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(methylphosphonate-linked; nucleic acid anal. by uses of mass labeled identification oligonucleotides and their capture for subsequent identification by mass spectrometry)

IT Mass spectrometry
Nucleic acid hybridization
(nucleic acid anal. by uses of mass labeled identification oligonucleotides and their capture for subsequent identification by mass spectrometry)

IT Nucleoside analogs
Oligonucleotides
Peptide nucleic acids
Phosphorothioate oligodeoxyribonucleotides
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(nucleic acid anal. by uses of mass labeled identification oligonucleotides and their capture for subsequent identification by mass spectrometry)

IT Amines, biological studies
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(oligonucleotide terminus modified with; nucleic acid anal. by uses of mass labeled identification oligonucleotides and their capture for subsequent identification by mass spectrometry)

IT Laser ionization mass spectrometry
(photodesorption, matrix-assisted, time-of-flight; nucleic acid anal.

by uses of mass labeled identification oligonucleotides and their capture for subsequent identification by mass spectrometry)

IT Laser desorption mass spectrometry
(photoionization, matrix-assisted, time-of-flight; nucleic acid anal. by uses of mass labeled identification oligonucleotides and their capture for subsequent identification by mass spectrometry)

IT Nucleic acids
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(target; nucleic acid anal. by uses of mass labeled identification oligonucleotides and their capture for subsequent identification by mass spectrometry)

IT 57-88-5D, Cholesterol, oligonucleotide terminus modified with
66-97-7D, Psoralen, oligonucleotide terminus modified with
260-94-6D, Acridine, oligonucleotide terminus modified with
1672-46-4D, Digoxigenin, oligonucleotide terminus modified with
2321-07-5D, Fluorescein, oligonucleotide terminus modified with
3301-79-9D, 6-Fam, oligonucleotide terminus modified with
6268-49-1D, Dabcyl, oligonucleotide terminus modified with
13558-31-1D, oligonucleotide terminus modified with
50402-56-7D, Edans, oligonucleotide terminus modified with
82354-19-6D, Texas red, oligonucleotide terminus modified with
82855-40-1D, Joe, oligonucleotide terminus modified with
120718-39-0D, ROX, oligonucleotide terminus modified with
120718-52-7D, Tamra, oligonucleotide terminus modified with
138039-55-1, Cascade blue 146368-14-1D, Cy5, oligonucleotide terminus modified with 146368-16-3D, Cy3, oligonucleotide terminus modified with 155911-16-3D, Hex, oligonucleotide terminus modified with 192230-82-3D, Tet, oligonucleotide terminus modified with 885323-53-5D, oligonucleotide terminus modified with
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(nucleic acid anal. by uses of mass labeled identification oligonucleotides and their capture for subsequent identification by mass spectrometry)

IT 139868-33-0, GenBank X62302 140041-65-2, GenBank X03917 140337-44-6, GenBank M60456 140530-23-0, GenBank X13752 140758-67-4, GenBank J00413
194380-70-6, GenBank AF006492 204884-28-6, GenBank AF047339
224358-99-0, GenBank AF028722 225636-20-4, GenBank AB020013
225673-93-8, GenBank AF134811 322038-96-0, GenBank AK002286
322290-53-9, GenBank AK012501 336087-75-3, GenBank AF364516
382737-36-2, GenBank X01997 384408-50-8, GenBank V00714
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(nucleic acid anal. by uses of mass labeled identification oligonucleotides and their capture for subsequent identification by mass spectrometry)

IT 50-89-5D, Thymidine, biotin conjugates, biological studies 50-91-9
54-42-2, 5-Iodo-2'-deoxyuridine 59-14-3, 5-Bromo-2'-deoxyuridine
73-03-0, Cordycepin 452-06-2, 2-Aminopurine 611-53-0,
5-Iodo-2'-deoxycytidine 838-07-3, 5-Methyl-2'-deoxycytidine 890-38-0,
2'-Deoxyinosine 951-78-0, 2'-Deoxyuridine 964-21-6
1022-79-3, 5-Bromo-2'-deoxycytidine 2002-35-9,
N6-Methyl-2'-deoxyadenosine 3881-21-8, 2'-O-Methylinosine 4097-22-7,
2',3'-Dideoxyadenosine 4546-68-3, 2'-Deoxynebularine 4546-70-7
5930-94-9, 3-Nitropyrrole 6146-52-7, 5-Nitroindole 7236-57-9,
4-Thiothymidine 7481-89-2, 2',3'-Dideoxycytidine 10356-76-0,
5-Fluoro-2'-deoxycytidine 13389-03-2 14985-44-5,
8-Bromo-2'-deoxyadenosine 16096-32-5, 4-Methyl-indole 28585-51-5
50591-13-4 60129-59-1, 7-Deaza-2'-deoxyadenosine 62471-63-0,

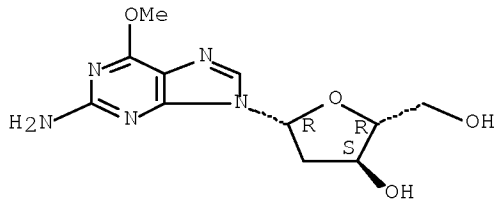
8-Oxo-2'-deoxyadenosine 68045-42-1 86392-75-8,
7-Deaza-2'-deoxyguanosine 88847-89-6, 8-Oxo-dG 95119-96-3
109389-24-4 109389-25-5 113886-70-7 114485-36-8 126128-42-5, DP
179817-95-9 179817-96-0
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST
(Analytical study); BIOL (Biological study); USES (Uses)
(oligonucleotides containing; nucleic acid anal. by uses of mass
labeled identification oligonucleotides and their capture for
subsequent identification by mass spectrometry)

IT 885709-51-3 885709-52-4 885709-53-5 885709-54-6 885709-55-7
885709-56-8 885709-57-9 885709-58-0 885709-59-1 885709-60-4
885709-61-5 885709-62-6 885709-63-7 885709-64-8 885709-65-9
885709-66-0 885709-67-1 885709-68-2 885709-69-3 885709-70-6
885709-71-7 885709-72-8 885709-73-9 885709-74-0 885709-75-1
885709-76-2 885709-77-3 885709-78-4 885709-79-5 885709-80-8
885709-81-9 885709-82-0 885709-83-1 885709-84-2 885709-85-3
885709-86-4 885709-87-5 885709-88-6 885709-89-7 885709-90-0
885709-91-1 885709-92-2 885709-93-3 885709-94-4 885709-95-5
885709-96-6 885709-97-7 885709-98-8 885709-99-9 885710-00-9
885710-01-0 885710-02-1 885710-03-2 885710-04-3 885710-05-4
885710-06-5 885710-07-6 885710-08-7 885710-09-8 885710-10-1
885710-11-2 885712-12-3 885710-13-4 885710-14-5 885710-15-6
885710-16-7 885710-17-8 885710-18-9
RL: PRP (Properties)
(unclaimed sequence; nucleic acid anal. by uses of mass labeled
identification oligonucleotides and their capture for
subsequent identification by mass spectrometry)

IT 964-21-6
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST
(Analytical study); BIOL (Biological study); USES (Uses)
(oligonucleotides containing; nucleic acid anal. by uses of mass
labeled identification oligonucleotides and their capture for
subsequent identification by mass spectrometry)

RN 964-21-6 HCAPLUS
CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 5 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2005:427312 HCAPLUS Full-text
DOCUMENT NUMBER: 143:149197
TITLE: Separation of modified 2'-deoxyoligonucleotides using ion-pairing reversed-phase HPLC
AUTHOR(S): Gelhaus, Stacy L.; LaCourse, William R.
CORPORATE SOURCE: Department of Chemistry and Biochemistry, University of Maryland, Baltimore, MD, 21250, USA

SOURCE: Journal of Chromatography, B: Analytical Technologies in the Biomedical and Life Sciences (2005), 820(2), 157-163
CODEN: JCBAAI; ISSN: 1570-0232
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB A group of 18-mers of the same base sequence, but with differing alkyl modifications is used to investigate effects of these modifications on retention of oligonucleotides using ion-pairing reversed-phase liquid chromatog. (IP-RPLC). It is shown that IP-RPLC is able to distinguish between oligonucleotides differing only by a single alkyl group. The identity of the nucleobase and position and length of the alkyl adduct affect retention of the oligonucleotide. These separation phenomena result from changes in charge and hydrophobicity upon alkylation. As demonstrated in this paper; chromatog. selectivity, unique to IP-RPLC, greatly facilitates the purification process of modified oligonucleotides.

CC 9-3 (Biochemical Methods)
Section cross-reference(s): 3, 33

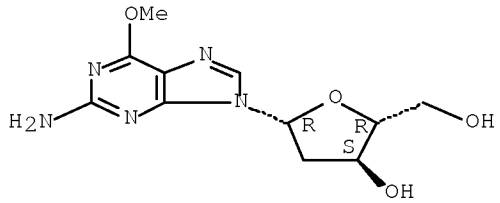
IT Oligodeoxyribonucleotides
RL: ANT (Analyte); BSU (Biological study, unclassified); PRP (Properties); PUR (Purification or recovery); ANST (Analytical study); BIOL (Biological study); PREP (Preparation)
(separation of modified 2'-deoxyoligonucleotides using ion-pairing reversed-phase HPLC)

IT 838-07-3D, oligonucleotide derivative 964-21-6D, oligonucleotide derivative 2002-35-9D, oligonucleotide derivative 50591-13-4D, oligonucleotide derivative 50704-46-6D, oligonucleotide derivative 101803-03-6D, oligonucleotide derivative 283600-46-4D, oligonucleotide derivative
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(separation of modified 2'-deoxyoligonucleotides using ion-pairing reversed-phase HPLC)

IT 964-21-6D, oligonucleotide derivative
RL: BSU (Biological study, unclassified); PRP (Properties); BIOL (Biological study)
(separation of modified 2'-deoxyoligonucleotides using ion-pairing reversed-phase HPLC)

RN 964-21-6 HCAPLUS
CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 6 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2002:832909 HCAPLUS Full-text
DOCUMENT NUMBER: 137:348832

Serial#: 10/553,948

TITLE: Mass spectrometric analysis of nucleic acids using oligonucleotides modified with mass labels
INVENTOR(S): Grosveld, Frank
PATENT ASSIGNEE(S): Erasmus Universiteit Rotterdam, Neth.
SOURCE: PCT Int. Appl., 45 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002086051	A2	20021031	WO 2002-IB2298	20020424
WO 2002086051	A3	20031120		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2445248	A1	20021031	CA 2002-2445248	20020424
AU 2002309185	A1	20021105	AU 2002-309185	20020424
EP 1385932	A2	20040204	EP 2002-735871	20020424
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2005500824	T	20050113	JP 2002-583567	20020424
BR 2002009205	A	20051213	BR 2002-9205	20020424
US 20040137570	A1	20040715	US 2003-693308	20031024

PRIORITY APPLN. INFO.:

GB 2001-10030	A	20010424
GB 2001-10029	A	20010424
WO 2002-IB2298	W	20020424

AB The present invention relates to nucleic acid anal. and in particular, but not exclusively, computational aspects of nucleic acid anal. The present invention provides a method for constructing a set, or repertoire, of sequence-specific binding mols. which are differentiable by mass. According to an aspect of the present invention, there is provided a method for constructing a repertoire of oligomers differentiable by mass, comprising: (a) providing a heterogeneous pool of monomers, wherein said monomers are modified by addition of one or more of a selection of mass labels; (b) optionally, providing a heterogeneous pool of unlabeled monomers; (c) determining the monomer sequences of the oligomers to be represented in the repertoire and calculating the number and nature of the mass labels to be incorporated into each monomer such that each oligomer differs in mass; and (d) assembling a plurality of labeled monomers and, optionally, one or more unlabeled monomers, to form the oligomers. The repertoire is constructed so that each oligomer with a different sequence has a different mass characteristic. The members of the repertoire which hybridized to the nucleic acid can then be identified by a mass anal. In another aspect, the invention provides a method for analyzing nucleic acid in a biol. sample, comprising the steps of: (a) immobilizing the nucleic acid (s) in the sample onto a solid support; (b) hybridizing to the nucleic acid (s) at a desired stringency a repertoire of oligonucleotides, and eluting those members of the repertoire which do not hybridize at the desired stringency; (c) eluting the repertoire members hybridized in step (b) and analyzing said members to resolve their mass. A powerful technique to detect and quantify nucleic acid sequences based on the identification of oligomers according to their mass is provided. The technique does not suffer from the disadvantages associated with 32P-labeling or forming biotinylated or fluorescein-conjugated probes and when

coupled with a mass spectrometric anal. gives rapid, precise and unambiguous results.

IC ICM C12G

CC 9-16 (Biochemical Methods)
Section cross-reference(s): 3

ST nucleic acid analysis oligonucleotide mass spectrometry label

IT Oligonucleotides
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(2'-O-Me, methylphosphonate-linked; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT RNA
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(2'-OMe; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT DNA
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(abasic site-containing, oligonucleotide base modification with; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT Computer program
Computers
Immobilization, molecular or cellular
Mass spectrometry
Nucleic acid hybridization
Sequence homology analysis
Time-of-flight mass spectrometry
(mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT DNA
Nucleic acids
RNA
mRNA
RL: ANT (Analyte); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study)
(mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT Phosphorothioate oligonucleotides
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT Oligonucleotides
Oligopeptides
Peptide nucleic acids
Probes (nucleic acid)
RL: ARG (Analytical reagent use); BUU (Biological use, unclassified); ANST (Analytical study); BIOL (Biological study); USES (Uses)
(mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT Amines, uses
Thiols, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(oligonucleotide modification with; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT Phosphates, uses
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(phosphorothioates, oligonucleotide backbone modification with; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT Laser ionization mass spectrometry
(photodesorption, matrix-assisted; mass spectrometric anal. of nucleic

acids using oligonucleotides modified with mass labels)

IT Laser desorption mass spectrometry
(photoionization, matrix-assisted; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT DNA
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(rDNA, oligonucleotide modification with; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT 138039-55-1
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Cascade Blue, oligonucleotide modification with; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT 146368-16-3, Cy3
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Cy3, oligonucleotide modification with; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT 146368-14-1, Cy5
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(Cy5, oligonucleotide modification with; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT 155911-16-3, HEX
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(HEX, oligonucleotide modification with; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT 120718-52-7, TAMRA
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

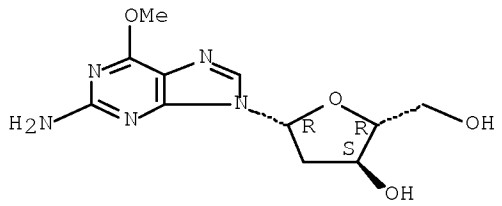
IT 993-13-5
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(oligonucleotide backbone modification with; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT 50-89-5D, DT, conjugates with biotin 50-91-9 54-42-2 59-14-3 73-03-0, Cordycepin 452-06-2, 2-Aminopurine 611-53-0 838-07-3 890-38-0 951-78-0 964-21-6 1022-79-3 2002-35-9 3881-21-8 4097-22-7 4546-68-3, 2'-Deoxynebularine 5930-94-9, 3-Nitropyrrole 6146-52-7, 5-Nitroindole 7236-57-9 7481-89-2 10356-76-0 13389-03-2 14985-44-5 16096-32-5, 4-Methylindole 28585-51-5 50591-13-4 60129-59-1 62471-63-0 86392-75-8 88847-89-6, 8-Oxo dG 109389-24-4 109389-25-5 113886-70-7 114485-36-8 126128-42-5 179817-95-9 179817-96-0
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(oligonucleotide base modification with; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT 51-28-5, Dinitrophenol, uses 56-81-5, Glycerol, uses 57-88-5, Cholesterol, uses 58-85-5D, Biotin, derivs. 66-97-7, Psoralen 81-88-9 260-94-6, Acridine 1672-46-4, Digoxigenin 2321-07-5, Fluorescein 3301-79-9, 6-FAM 6268-49-1, Dabcyl 50402-56-7, Edans 82354-19-6, Texas Red 82855-40-1, JOE 120718-39-0, ROX 192230-82-3, TET
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(oligonucleotide modification with; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)

IT 4546-70-7
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(oligonucleotides containing; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)
IT 123039-46-3 474235-91-1 474235-92-2 474235-93-3 474349-62-7 474349-63-8
RL: PRP (Properties)
(unclaimed sequence; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)
IT 964-21-6
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)
(oligonucleotide base modification with; mass spectrometric anal. of nucleic acids using oligonucleotides modified with mass labels)
RN 964-21-6 HCAPLUS
CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.

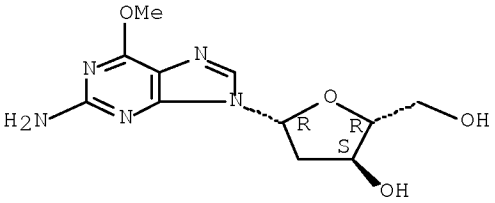


OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)
REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 7 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2000:559575 HCAPLUS Full-text
DOCUMENT NUMBER: 133:335422
TITLE: Synthesis and Characterization of DNA Containing O6-Carboxymethylguanine
AUTHOR(S): Xu, Y.-Z.
CORPORATE SOURCE: Department of Biochemistry and Molecular Biology, University College London, London, WC1E 6BT, UK
SOURCE: Tetrahedron (2000), 56(33), 6075-6081
CODEN: TETRAB; ISSN: 0040-4020
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB O6-Carboxymethylguanine was formed in DNA treated with N-nitrosoglycocholic acid and believed to be implicated in human gastrointestinal and colorectal tumor. An efficient method is presented here for synthesis of oligodeoxynucleotides containing O6-carboxymethylguanine at pre-determined positions. The synthetic protocol also allows for production of oligomers containing O6-aminocarbonylmethylguanine. These guanine-modified oligomers have been fully characterized and could provide a useful tool for biol. studies of these modified bases.
CC 33-10 (Carbohydrates)
IT Oligodeoxyribonucleotides
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(guanine-modified; synthesis and characterization of DNA containing

O6-carboxymethylguanine)
IT 964-21-6P 120022-79-9P 189457-82-7P 189457-83-8P
302584-91-4P 302584-93-6P 302584-95-8P 302584-97-0P 302585-01-9P
302585-05-3P 302585-07-5P 302585-13-3P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis and characterization of DNA containing O6-carboxymethylguanine)
IT 964-21-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis and characterization of DNA containing O6-carboxymethylguanine)
RN 964-21-6 HCAPLUS
CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 8 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1998:479638 HCAPLUS Full-text
DOCUMENT NUMBER: 129:91400
ORIGINAL REFERENCE NO.: 129:18739a,18742a
TITLE: Method for polynucleotide amplification using modified oligonucleotide primers having a non-extendable 3'-end
INVENTOR(S): Ullman, Edwin F.; Lishanski, Alla; Kurn, Nurith
PATENT ASSIGNEE(S): Dade Behring Marburg G.m.b.H., Germany
SOURCE: PCT Int. Appl., 85 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9828443	A1	19980702	WO 1997-US23706	19971217
W: CA, JP				
RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
US 6482590	B1	20021119	US 1997-965492	19971106
CA 2246225	A1	19980702	CA 1997-2246225	19971217
EP 904412	A1	19990331	EP 1997-952592	19971217
EP 904412	B1	20011010		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
AT 206766	T	20011015	AT 1997-952592	19971217

JP 2002503089	T	20020129	JP 1998-529035		19971217
ES 2165634	T3	20020316	ES 1997-952592		19971217
PT 904412	E	20020429	PT 1997-952592		19971217
PRIORITY APPLN. INFO.:			US 1996-33137P	P	19961220
			US 1997-965492	A	19971106
			US 1996-33137	P	19961220
			WO 1997-US23706	W	19971217

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The present invention relates to a method for selectively extending an oligonucleotide primer along a specific target polynucleotide sequence in a mixture of polynucleotides. The method comprises providing the modified oligonucleotide having a 3'-end that is not extendable along any polynucleotide and extending the oligonucleotide primer selectively along the specific target polynucleotide sequence by controlling the degradation of the 3'-end of the modified oligonucleotide. In this way extension along polynucleotides other than the specific target polynucleotide sequence is substantially reduced or avoided. In another aspect the invention is an improvement in a method for amplifying a target polynucleotide sequence. The improvement comprises deriving the oligonucleotide primer from a modified oligonucleotide having a portion that hybridizes to the target polynucleotide sequence except for the 3'-end thereof, which has at least one nucleotide analog that is incapable of hybridizing to a polynucleotide. Thus the use of 3'-etheno-dA-modified oligonucleotides both as inner primers in nested PCR greatly reduced the number of spurious amplification products as determined by gel electrophoresis. Kits for carrying out the above methods are also disclosed.

IC ICM C12Q001-68

CC 3-1 (Biochemical Genetics)

ST polynucleotide amplification modified oligonucleotide primer; DNA amplification modified oligonucleotide primer; PCR modified oligonucleotide primer

IT Nucleic acid amplification (method)
(DNA; method for polynucleotide amplification using modified oligonucleotide primers having a non-extendable 3'-end)

IT Nucleic acid amplification (method)
PCR (polymerase chain reaction)
(method for polynucleotide amplification using modified oligonucleotide primers having a non-extendable 3'-end)

IT Primers (nucleic acid)
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(method for polynucleotide amplification using modified oligonucleotide primers having a non-extendable 3'-end)

IT PCR (polymerase chain reaction)
(nested; method for polynucleotide amplification using modified oligonucleotide primers having a non-extendable 3'-end)

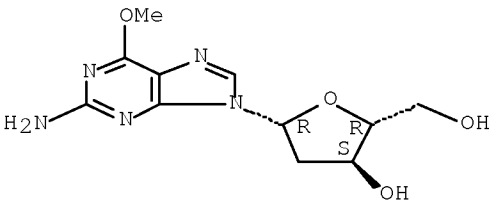
IT 964-21-6D, 6-O-Methyl-2'-deoxyguanosine, oligonucleotide 3'-end modified 50591-13-4D, oligonucleotide 3'-end modified 68498-25-9D, Ethenodeoxyadenosine, oligonucleotide 3'-end modified 79393-91-2, 3',5'-Exonuclease
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(method for polynucleotide amplification using modified oligonucleotide primers having a non-extendable 3'-end)

IT 964-21-6D, 6-O-Methyl-2'-deoxyguanosine, oligonucleotide 3'-end modified
RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)
(method for polynucleotide amplification using modified oligonucleotide primers having a non-extendable 3'-end)

RN 964-21-6 HCAPLUS

CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 8 THERE ARE 8 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS)
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

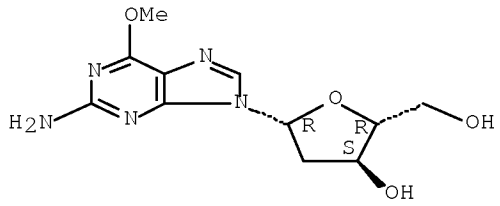
L38 ANSWER 9 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1997:190264 HCAPLUS Full-text
DOCUMENT NUMBER: 126:293010
ORIGINAL REFERENCE NO.: 126:56737a,56740a
TITLE: The mechanism of decomposition of N-methyl-N-nitrosourea (MNU) in water and a study of its reactions with 2'-deoxyguanosine, 2'-deoxyguanosine 5'-monophosphate and d(GTGCAC)
AUTHOR(S): Golding, Bernard T.; Bleasdale, Christine; McGinnis, Joseph; Mueller, Susanna; Rees, Hue Thu; Rees, Nicholas H.; Farmer, Peter B.; Watson, William P.
CORPORATE SOURCE: Dep. Chem., Univ. Newcastle upon Tyne, Newcastle upon Tyne, NE1 7RU, UK
SOURCE: Tetrahedron (1997), 53(11), 4063-4082
CODEN: TETRAB; ISSN: 0040-4020
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 126:293010

AB The carcinogenicity of N-methyl-N-nitrosourea (MNU) arises from its ability to methylate DNA. This occurs in an aqueous environment and therefore an appreciation of the mode of decomposition of MNU in water is essential to understanding the mechanism of DNA methylation and its base sequence dependence. The kinetics of MNU hydrolyses are shown to be first order in MNU with a steep rise in rate above pH 8. Using NMR for in situ monitoring of reaction intermediates and products from hydrolyzes of [13CO]MNU, [15NH2]MNU and [13CH3]MNU, it is proved that base-induced hydrolysis of MNU is initiated by deprotonation at the carbamoyl group. The critical reactive species are shown to be the methyldiazonium ion (Me-N2+) and cyanate (NCO-). Investigations of reactions of [13CH3]MNU with 2'-deoxyguanosine (dGuo) and 2'-deoxyguanosine 5'-monophosphate (dGuo-5P) showed that: (a) the site of methylation of dGuo is highly pH-dependent (relatively more N-1 and O6-methylation compared to N-7 occurs at higher pH); (b) the principal site of methylation of dGuo-5P by MNU is at phosphate; (c) incorporation of deuterium into Me groups occurs in D2O at higher pH. Methylation of the oligonucleotide d(GT[15N]GCAC) by MNU in D2O showed partial deuteration of the N777-Me groups of the guanines, while methylation by MNU in water indicated no significant preference for either guanine with respect to N7-methylation.

CC 22-8 (Physical Organic Chemistry)
Section cross-reference(s): 4, 6, 14, 26, 33
ST safety decompn mechanism aq methylnitrosourea; monophosphate deoxyguanosine aq methylnitrosourea; deoxyguanosine aq methylnitrosourea; oligonucleotide aq methylnitrosourea

IT Nucleosides, reactions
Oligonucleotides
RL: BSU (Biological study, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); RCT (Reactant); BIOL (Biological study); PROC (Process); RACT (Reactant or reagent)
(decomposition mechanism of aqueous N-methyl-N-nitrosourea (MNU) and MNU's reactions with 2'-deoxyguanosine, 2'-deoxyguanosine 5'-monophosphate or d(GTGCAC))
IT 624-83-9P, Methyl isocyanate 964-21-6P 5132-79-6P
28074-91-1P
RL: PNU (Preparation, unclassified); PREP (Preparation)
(decomposition mechanism of aqueous N-methyl-N-nitrosourea (MNU) and MNU's reactions with 2'-deoxyguanosine, 2'-deoxyguanosine 5'-monophosphate or d(GTGCAC))
IT 964-21-6P
RL: PNU (Preparation, unclassified); PREP (Preparation)
(decomposition mechanism of aqueous N-methyl-N-nitrosourea (MNU) and MNU's reactions with 2'-deoxyguanosine, 2'-deoxyguanosine 5'-monophosphate or d(GTGCAC))
RN 964-21-6 HCAPLUS
CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 17 THERE ARE 17 CAPLUS RECORDS THAT CITE THIS RECORD (17 CITINGS)
REFERENCE COUNT: 60 THERE ARE 60 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 10 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1996:663725 HCAPLUS Full-text
DOCUMENT NUMBER: 126:72170
ORIGINAL REFERENCE NO.: 126:13909a,13912a
TITLE: MutS interaction with mismatch and alkylated base containing DNA molecules detected by optical biosensor
AUTHOR(S): Babic, Ivan; Andrew, Susan E.; Jirik, Frank R.
CORPORATE SOURCE: Biomedical Research Center and Department of Medicine, 2222 Health Sciences Mall, University of British Columbia, Vancouver, B.C., Can.
SOURCE: Mutation Research, Fundamental and Molecular Mechanisms of Mutagenesis (1996), 372(1), 87-96
CODEN: MUREAV; ISSN: 0027-5107
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
AB An optical biosensor was used to monitor interactions between the Escherichia coli DNA mismatch repair mol. MutS and various immobilized oligonucleotides. While associating poorly with single-stranded DNA, MutS was capable of rapid association/dissociation from homoduplex DNA. The interaction of MutS with

oligonucleotide 30-mers containing single site mismatches demonstrated that during the dissociation phase, MutS binding was greatest to a G-G mismatch, followed by G-T>A-A>C-T, A-C. Binding to A-G, T-T and C-C mispairs was marginally higher than that seen between MutS and homoduplex DNA. The ability of MutS to interact with 30-mers containing alkylated bases was also tested. While binding to O6-methyl-G-C, or to O4-methyl-T-A base pairs was similar to that of homoduplex DNA, strong binding was seen to a O6-methyl-G-T mispair. O4-methyl-T-G, however, was poorly recognized by MutS, with relative binding affinity similar to homoduplex DNA, predicting poor in vivo recognition of O4-methyl-T-G by MutS. Interestingly, MutS demonstrated a relatively high affinity for an 1,N6-etheno-A-T containing homoduplex. Thus, in allowing rapid evaluation of interactions between such mols., the biosensor will be useful to structure-function analyses.

CC 9-5 (Biochemical Methods)

IT DNA
Oligonucleotides
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(MutS interaction with mismatch and alkylated base containing DNA mols. detected by optical biosensor)

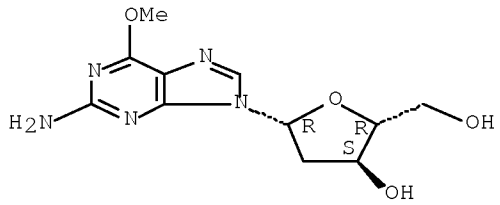
IT 964-21-6, O6-Methyldeoxyguanosine 50591-13-4 68498-25-9, 1,N6-Ethenodeoxyadenosine
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(MutS interaction with mismatch and alkylated base containing DNA mols. detected by optical biosensor)

IT 964-21-6, O6-Methyldeoxyguanosine
RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process)
(MutS interaction with mismatch and alkylated base containing DNA mols. detected by optical biosensor)

RN 964-21-6 HCAPLUS

CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 22 THERE ARE 22 CAPLUS RECORDS THAT CITE THIS RECORD (22 CITINGS)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 11 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1996:206593 HCAPLUS Full-text

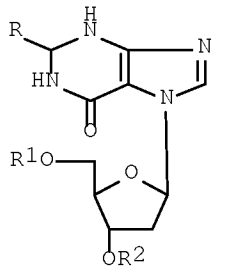
DOCUMENT NUMBER: 125:11328

ORIGINAL REFERENCE NO.: 125:2485a,2488a

TITLE: N7-DNA: synthesis and base pairing of oligonucleotides containing N7-(2-deoxy-β-D-erythro-pentofuranosyl)guanine (N7Gd)

AUTHOR(S): Seela, Frank; Leonard, Peter

CORPORATE SOURCE: Inst. Chemie, Univ. Osnabrueck, Osnabrueck, D-49069, Germany
SOURCE: Helvetica Chimica Acta (1996), 79(2), 477-87
CODEN: HCACAV; ISSN: 0018-019X
PUBLISHER: Verlag Helvetica Chimica Acta
DOCUMENT TYPE: Journal
LANGUAGE: English
GI



I

AB The synthesis of oligonucleotides containing I (R = NH2, R1 = R2 = H) is described. The latter was prepared by nucleobase-anion glycosylation of 2-amino-6-methoxypurine with 2-deoxy-3,5-di-O-(4-toluoyl)-α-D- erythro-pentofuranosyl chloride followed by detoluoylation and displacement of the MeO group. Upon base protection with the Me2NHC:-residue the 4,4-dimethoxytrityl group was introduced at OH-C(5'). The phosphonate I [R = N:CNHMe2, R1 = CPh(4-C6H4OMe)2, R2 = PHO2-NHEt3+] and the phosphoramidite I [R = N:CNHMe2, R1 = CPh(4-C6H4OMe)2, R2 = PN(CHMe2)2O(CH2)2CN] were prepared and used in solid-phase oligonucleotide synthesis. The self-complementary dodecamer d(N7G-C)6 shows sigmoidal melting. The Tm of the duplex is 40°. This demonstrates that guanine residues linked via N(7) of purine to the phosphodiester backbone are able to undergo base pairing with cytosine.

CC 33-9 (Carbohydrates)

ST oligonucleotide guanine deoxypentofuranosyl prepn base pairing; guanine deoxypentofuranosyl prepn

IT Nucleosides, preparation
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(deoxyribo-, purine, preparation and base pairing of oligonucleotides containing (deoxypentofuranosyl)guanine)

IT 4330-21-6 20535-83-5, 2-Amino-6-methoxypurine 67219-55-0
RL: RCT (Reactant); RACT (Reactant or reagent)
(preparation and base pairing of oligonucleotides containing (deoxypentofuranosyl)guanine)

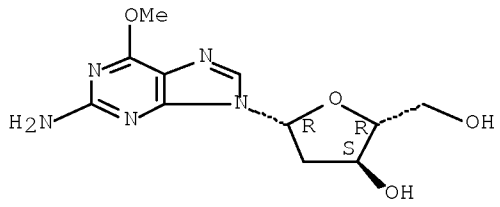
IT 159791-63-6P 177162-14-0P 177162-16-2P 177162-17-3P 177162-18-4P 177162-19-5P 177162-20-8P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and base pairing of oligonucleotides containing (deoxypentofuranosyl)guanine)

IT 964-21-6P 177162-15-1P 177162-21-9P 177257-50-0P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and base pairing of oligonucleotides containing (deoxypentofuranosyl)guanine)

IT 964-21-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and base pairing of oligonucleotides containing

(deoxypentofuranosyl)guanine)
RN 964-21-6 HCAPLUS
CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.

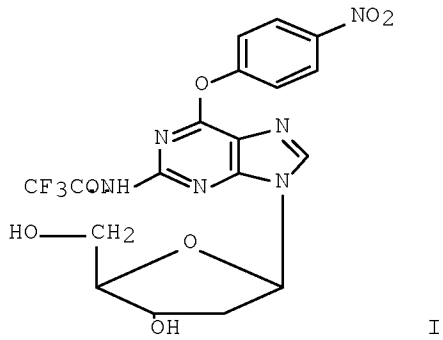


OS.CITING REF COUNT: 14 THERE ARE 14 CAPLUS RECORDS THAT CITE THIS RECORD (14 CITINGS)

L38 ANSWER 12 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1995:638582 HCAPLUS Full-text
DOCUMENT NUMBER: 123:83952
ORIGINAL REFERENCE NO.: 123:15045a,15048a
TITLE: 6-O-Substituted guanosine derivatives prepared by acylation and substitution reactions
INVENTOR(S): Jones, Roger A.; Fathip, Reza; Gaffney, Barbara L.
PATENT ASSIGNEE(S): Rutgers, The State University, USA
SOURCE: U.S., 24 pp. Cont. of U.S. Ser. No. 439,616, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5412088	A	19950502	US 1992-863653	19920403
PRIORITY APPLN. INFO.:			US 1992-863653	B1 19920403
			US 1989-439616	19891120

OTHER SOURCE(S): CASREACT 123:83952; MARPAT 123:83952
GI



I

AB The following species of N6-activated guanosine derivs. are disclosed: 2-N-trifluoroacetamido-6-(4-nitrophenoxy)-9-(2-deoxy-β-D-erythro- pentofuranosyl)purine (I), 2-N-trifluoroacetamido-6-pentafluorophenoxy-9- (2-deoxy-β-D-erythro-pentofuranosyl)purine, and 2-amino-6-(4-dimethylaminopyridinium)-9-(2-deoxy-β-D-erythro- pentofuranosyl)purine. These guanosine compds. are useful as precursors in the synthesis of a wide variety of antiviral and anticancer nucleosides such as 2-amino-2-deoxyadenosine or 6-thio-deoxyguanosine. Also disclosed are oligonucleotides containing the above nucleosides which are precursors to modified oligonucleotides which are useful as hybridization probes. Thus, e.g., 4 mmol deoxyguanosine was treated with 3.4 mL (24 mmol) of trifluoroacetic anhydride followed by 11.1 g (80 mmol) of 4-nitrophenol; workup afforded I in 67% yield.

IC ICM C07H019-167
ICS C07H019-173; C07H019-20; C07H021-04

INCL 536027810

CC 33-9 (Carbohydrates)

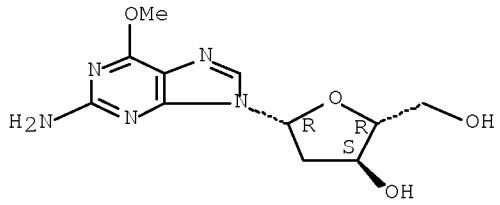
IT 789-61-7P 964-21-6P 4546-70-7P 83024-94-6P 128790-73-8P
128790-74-9P 128790-75-0P 165290-73-3P 165290-74-4P 165290-75-5P
165337-46-2P 165337-47-3P 165337-48-4P
RL: SPN (Synthetic preparation); PREP (Preparation)
(6-O-substituted guanosine derivs. prepared by acylation and substitution reactions)

IT 964-21-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(6-O-substituted guanosine derivs. prepared by acylation and substitution reactions)

RN 964-21-6 HCAPLUS

CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L38 ANSWER 13 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1995:51637 HCAPLUS Full-text

DOCUMENT NUMBER: 123:9832

ORIGINAL REFERENCE NO.: 123:2067a,2070a

TITLE: Synthesis of Oligodeoxyribonucleotides Containing Analogs of O6-Methylguanine and Reaction with O6-Alkylguanine-DNA Alkyltransferase

AUTHOR(S): Spratt, Thomas E.; Campbell, Colin R.

CORPORATE SOURCE: Division of Chemical Carcinogenesis, American Health Foundation, Valhalla, NY, 10595, USA

SOURCE: Biochemistry (1994), 33(37), 11364-71
CODEN: BICHAW; ISSN: 0006-2960

DOCUMENT TYPE: Journal
LANGUAGE: English

AB O6-Alkylguanine-DNA alkyltransferase (AGT) repairs the mutagenic O6-methylguanine (O6mG) lesion by transferring a Me group from the 6-position of guanine to a cysteine residue on the protein. The simplest possible mechanism is an SN2 process in which the cysteine displaces the Me group off of the guanine in a concerted reaction. To probe the interactions between the protein and guanine leaving group, oligodeoxyribonucleotide duplexes containing analogs of O6mG were synthesized and then reacted with AGT. AGT was reacted with oligonucleotide duplexes of the sequence 5'-GGCGCTXGAGGCGTG-3' in which X was O6mG or an analog in which X was paired with C. All detected reactions were demethylations of the oligodeoxyribonucleotides except for O6-methyl-3-deoxyguanine, which reacted in an unknown manner. The second-order rate consts. obtained are reported. The large decreases in rate observed for changing the oxygen at the 6-position and the ring nitrogen at the 1-position suggest that these sites are hydrogen bond acceptors and/or proton acceptors during the reaction. The potential hydrogen bond from the protein to the 1-position of O6mG as well as the increase in rate observed for O6-methylhypoxanthine suggests that the duplex opens up in order for the reaction to occur.

CC 33-9 (Carbohydrates)
Section cross-reference(s): 7, 22

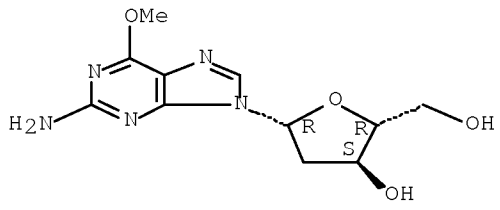
IT Nucleotides, preparation
RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation)
(oligo-, deoxyribo-, synthesis of methylguanine analog-containing oligodeoxyribonucleotide duplexes and reaction with alkyltransferase)

IT 964-21-6P 23526-11-6P 37109-88-9P 37113-42-1P
52192-38-8P 86392-74-7P 115945-78-3P 163882-36-8P 163882-37-9P
163882-38-0P 163882-39-1P 163882-40-4P 163882-41-5P 163882-42-6P
163882-43-7P 163882-44-8P 163882-45-9P 163882-46-0P 163882-47-1P
163882-48-2P 163882-49-3P 163882-50-6P 163882-51-7P 163882-52-8P
163882-53-9P 163882-54-0P 163882-55-1P 163882-56-2P 163882-57-3P
163882-58-4P 163882-59-5P 163882-60-8P 163882-61-9P 163882-62-0P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of methylguanine analog- containing oligodeoxyribonucleotide duplexes and reaction with alkyltransferase)

IT 964-21-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(synthesis of methylguanine analog- containing oligodeoxyribonucleotide duplexes and reaction with alkyltransferase)

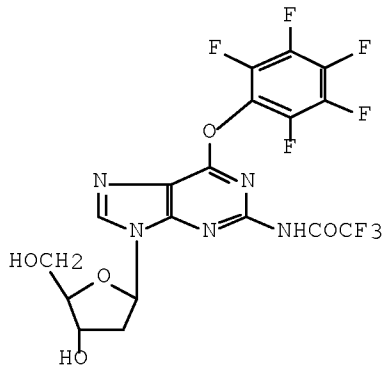
RN 964-21-6 HCAPLUS
CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 32 THERE ARE 32 CAPLUS RECORDS THAT CITE THIS RECORD (32 CITINGS)

L38 ANSWER 14 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1993:39313 HCAPLUS Full-text
DOCUMENT NUMBER: 118:39313
ORIGINAL REFERENCE NO.: 118:7183a,7186a
TITLE: 6-O-(Pentafluorophenyl)-2'-deoxyguanosine: a versatile synthon for nucleoside and oligonucleotide synthesis
AUTHOR(S): Gao, Hetian; Fathi, Reza; Gaffney, Barbara L.; Goswami, Bhaswati; Kung, Pei Pei; Rhee, Youngsook; Jin, Renzhe; Jones, Roger A.
CORPORATE SOURCE: Dep. Chem., Rutgers, State Univ. New Jersey, Piscataway, NJ, 08855, USA
SOURCE: Journal of Organic Chemistry (1992), 57(25), 6954-9
CODEN: JOCEAH; ISSN: 0022-3263
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 118:39313
GI



I

AB Title deoxyguanosine I can be used to generate in high yield 6-O-methyl-2'-deoxyguanosine, 2,6-diamino-9-(2-deoxy-β-D-erythro- pentofuranosyl)purine, and related derivs. Further, after appropriate protection and derivatization, I can be incorporated into oligonucleotides and there used for postsynthetic oligonucleotide modification. This approach is particularly useful for preparation of oligonucleotides containing 2,6-diaminopurine residues or their 6-alkylamino derivs. In addition, reaction of I, or I-containing oligonucleotides, with 4-(dimethylamino)pyridine (DMAP) gives a fluorescent guanine-DMAP adduct.

CC 33-9 (Carbohydrates)
Section cross-reference(s): 41

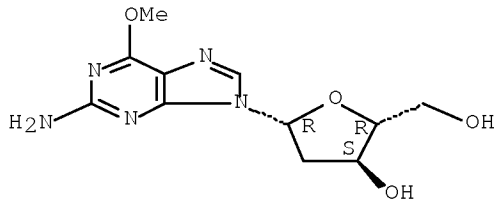
IT Nucleotides, polymers
RL: SPN (Synthetic preparation); PREP (Preparation)
(oligo-, deoxyribo-, preparation and HPLC of)

IT 964-21-6P 4546-70-7P 145052-12-6P 145052-13-7P
145052-14-8P 145052-15-9P 145052-16-0P 145052-23-9P 145052-25-1P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

IT 964-21-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation of)

RN 964-21-6 HCAPLUS
CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

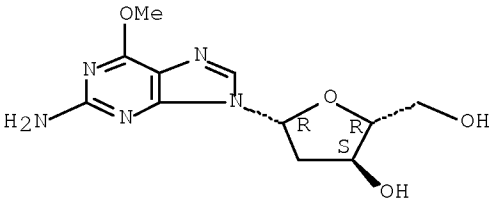
Absolute stereochemistry.



OS.CITING REF COUNT: 28 THERE ARE 28 CAPLUS RECORDS THAT CITE THIS RECORD (29 CITINGS)

L38 ANSWER 15 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1992:490686 HCAPLUS Full-text
DOCUMENT NUMBER: 117:90686
ORIGINAL REFERENCE NO.: 117:15849a,15852a
TITLE: Solid-phase synthesis of oligodeoxynucleotides containing 6-O-alkylguanosines
AUTHOR(S): Roelen, H. C. P. F.; Brugghe, H. F.; Van den Elst, H.; Klein, J. C.; Van der Marel, G. A.; Van Boom, J. H.
CORPORATE SOURCE: Gorlaeus Lab., Leiden, 2300 RA, Neth.
SOURCE: Recueil des Travaux Chimiques des Pays-Bas (1992), 111(5), 227-34
CODEN: RTCPA3; ISSN: 0165-0513
DOCUMENT TYPE: Journal
LANGUAGE: English
AB High-quality oligodeoxynucleotides having an 6-O-alkyl-2'-deoxyguanosine (alkyl = Me, Et, Pr, n-hexyl) residue at a predetd. position were obtained via a solid-phase approach using the 2-cyanoethyl N,N-diisopropylphosphoramidites of 5'-O-(4,4'-dimethoxytrityl)-protected 6-O-alkyl-2'-deoxyguanosines having a free exocyclic amino group, and 5'-O-(4,4'-dimethoxytrityl) N-acyl-protected 2'-deoxynucleosides.
CC 33-9 (Carbohydrates)
IT Nucleotides, polymers
RL: RCT (Reactant); RACT (Reactant or reagent)
(oligo-, deoxyribo-, alkylguanosine-containing, solid-phase synthesis of)
IT 964-21-6P 50704-46-6P 142738-53-2P 142738-54-3P
142738-55-4P 142738-56-5P 142738-57-6P 142738-58-7P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and oligodeoxynucleotide synthesis with)
IT 964-21-6P
RL: SPN (Synthetic preparation); PREP (Preparation)
(preparation and oligodeoxynucleotide synthesis with)
RN 964-21-6 HCAPLUS
CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

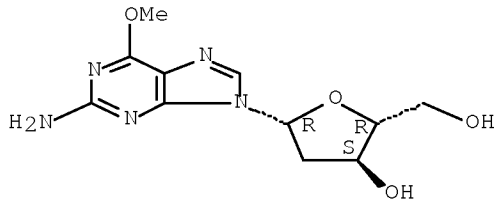
L38 ANSWER 16 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1991:673086 HCAPLUS Full-text
DOCUMENT NUMBER: 115:273086
ORIGINAL REFERENCE NO.: 115:46241a,46244a
TITLE: A sectored colony assay for monitoring mutagenesis by specific carcinogen-DNA adducts in Escherichia coli
AUTHOR(S): Pauly, Gary T.; Hughes, Stephen H.; Moschel, Robert C.
CORPORATE SOURCE: Frederick Cancer Res. Dev. Cent., Natl. Cancer Inst., Frederick, MD, 21702, USA
SOURCE: Biochemistry (1991), 30(50), 11700-6
CODEN: BICHAW; ISSN: 0006-2960
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To study the mutagenicity of various carcinogen-DNA adducts in E. coli, a cassette plasmid was developed that permits positioning of specific carcinogen-modified bases within the ATG initiation codon of the lacZ' α-complementation gene. Adduct-induced mutations inactivate the gene and lead to formation of blue and white sectored colonies when transformants from an α-complementing version of E. coli strain AB1157 are grown on media containing 5-bromo-4-chloro-3-indolyl β-D-galactoside. In the absence of mutation, blue colonies are produced. This system has been used to measure the mutagenicity of O6-methyl-, O6-ethyl-, and O6-butyl-2'-deoxyguanosine residues incorporated in place of the normal 2'-deoxyguanosine of the ATG initiation codon. Although a low percentage of sectored colonies was produced in this repair-proficient strain, pretreatment of the bacteria with N-methyl-N'-nitro-N-nitrosoguanidine to disable DNA repair led to a dose-dependent increase in the percentage of sectored colonies. This percentage increased as a function of modified guanine in the order O6-benzyl- < O6-methyl- < O6-ethyl-2'-deoxyguanosine. The only mutations detected at the site of incorporation of these O6-substituted guanines were G-to-A transitions. This sectored colony assay system permits convenient screening of large nos. of colonies and simplifies quantification of modified base-induced mutations whether they be single-base changes, frameshifts, insertions, or deletions.

CC 4-6 (Toxicology)
IT Mutagens
(deoxyguanosine derivs. in oligonucleotides as, in Escherichia coli)
IT Escherichia coli
(deoxyguanosine derivs. in oligonucleotides mutagenicity in)
IT Nucleotides, polymers
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(oligo-, mutagenicity of, in Escherichia coli)
IT 961-07-9D, 2'-Deoxyguanosine, derivs. 964-21-6, O6-Methyl-2'-deoxyguanosine 50704-46-6 129732-90-7
RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(mutagenicity of, in Escherichia coli, DNA adducts in relation to)
IT 964-21-6, O6-Methyl-2'-deoxyguanosine

RL: ADV (Adverse effect, including toxicity); BIOL (Biological study)
(mutagenicity of, in Escherichia coli, DNA adducts in relation to)
RN 964-21-6 HCAPLUS
CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.

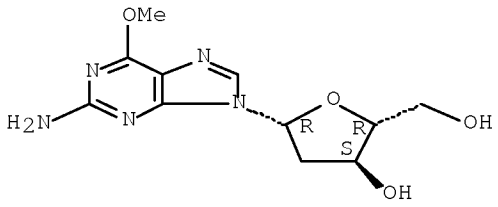


OS.CITING REF COUNT: 10 THERE ARE 10 CAPLUS RECORDS THAT CITE THIS RECORD (10 CITINGS)

L38 ANSWER 17 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1989:130229 HCAPLUS Full-text
DOCUMENT NUMBER: 110:130229
ORIGINAL REFERENCE NO.: 110:21387a,21390a
TITLE: Formation of O6-methyldeoxyguanosine at specific sites in a synthetic oligonucleotide designed to resemble a known mutagenic hotspot
AUTHOR(S): Richardson, Frank C.; Boucheron, Joyce A.; Skopek, Thomas R.; Swenberg, James A.
CORPORATE SOURCE: Dep. Biochem. Toxicol., Chem. Ind. Inst. Toxicol., Research Triangle Park, NC, 27709, USA
SOURCE: Journal of Biological Chemistry (1989), 264(2), 838-41
CODEN: JBCHA3; ISSN: 0021-9258
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Four synthetic oligodeoxyribonucleotides of the sequence 5'-CCG1TG2G3G4ATATGGGCTG-3' were constructed with a 1',2'-[3H]deoxyguanosine located at one of the four sites indicated (1, 2, 3, or 4). This sequence was derived from a region of the Escherichia coli xanthine-guanine phosphoribosyltransferase gene where position 4 is a site frequently mutated by N-methyl-N'-nitrosourea as compared to sites 1-3. These four oligomers were alkylated in both single- and double-stranded form with N-methyl-N'-nitrosourea, and the relative amount of O6-methyldeoxyguanosine (O6-MedGuo) formed at each position was quantitated. Up to a 5-6-fold greater formation of O6-MedGuo was observed at positions 3 and 4 as compared to positions 1 and 2. This uneven distribution was only observed in oligomers in the double-stranded form, suggesting that secondary structure was an important determinant in generating the uneven distribution of O6-MedGuo. Comparisons between the extent of O6-MedGuo formation and mutation frequency at the four positions suggest that a difference in the formation of promutagenic adducts at specific sites is just one of the factors involved in the generation of mutagenic hot-spots. The novel method developed was applied to the study of formation of O6-MedGuo at specific sites; however, it should be suitable for studying the formation and repair of DNA adducts generated by a variety of chems. in a wide variety of DNA sequences.
CC 4-6 (Toxicology)
Section cross-reference(s): 26
ST methylnitrosourea methyldeoxyguanosine formation oligonucleotide
IT Conformation and Conformers
Mutation
(methylnitrosourea methylation of oligonucleotides in

relation to)
IT Methylation
(oligonucleotides, by methylnitrosourea, methyldeoxyguanosine formation in relation to)
IT Nucleotides, polymers
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(oligo-, preparation and methylnitrosourea methylation of)
IT 578-76-7, N7-Methylguanine 964-21-6, O6-Methyldeoxyguanosine
20535-83-5, O6-Methylguanine
RL: FORM (Formation, nonpreparative)
(formation of, in oligonucleotide after methylnitrosourea methylation)
IT 3040-49-1, N-Methyl-N'-nitrosourea
RL: RCT (Reactant); RACT (Reactant or reagent)
(oligonucleotide methylation by, methyldeoxyguanosine formation in relation to)
IT 964-21-6, O6-Methyldeoxyguanosine
RL: FORM (Formation, nonpreparative)
(formation of, in oligonucleotide after methylnitrosourea methylation)
RN 964-21-6 HCAPLUS
CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 12 THERE ARE 12 CAPLUS RECORDS THAT CITE THIS RECORD (12 CITINGS)

L38 ANSWER 18 OF 18 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1982:85920 HCAPLUS Full-text
DOCUMENT NUMBER: 96:85920
ORIGINAL REFERENCE NO.: 96:14123a,14126a
TITLE: Synthesis and characterization of an oligonucleotide containing a carcinogen-modified base: O6-methylguanine
AUTHOR(S): Fowler, Kerry W.; Buechi, George; Essigmann, John M.
CORPORATE SOURCE: Dep. Chem., Massachusetts Inst. Technol., Cambridge, MA, 02139, USA
SOURCE: Journal of the American Chemical Society (1982), 104(4), 1050-4
CODEN: JACSAT; ISSN: 0002-7863
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The synthesis and characterization of the oligomer 5'-dTp(O3-Me)GpCpA-3' by the modified triester procedure is described, representing the preparation of a DNA fragment containing a base specifically covalently modified by a carcinogen. Using genetic engineering techniques, this tetramer will be substituted for a 5'-TpGpCpA-3' portion of the DNA of bacterial virus .vphi.X174 in order to study the effect on

replication of a well-characterized chemical modification of DNA at an exactly known point. The presence of O6-methylguanine in the oligomer inhibits the enzyme activities of snake venom phosphodiesterase and endonuclease P1.

CC 33-9 (Carbohydrates)

ST oligonucleotide carcinogen modified base; nucleotide oligo carcinogen modified base; methylguanine tetranucleotide

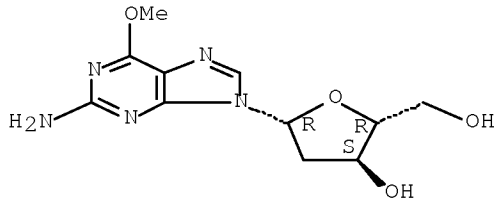
IT 964-21-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and benzoylation of)

IT 964-21-6P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(preparation and benzoylation of)

RN 964-21-6 HCAPLUS

CN Guanosine, 2'-deoxy-6-O-methyl- (CA INDEX NAME)

Absolute stereochemistry.



OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)

INVENTOR SEARCH

=> FILE HCAPLUS
FILE 'HCAPLUS' ENTERED AT 17:33:56 ON 19 APR 2010
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

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REVISED CLASS FIELDS (/NCL) LAST RELOADED: Feb 2010
USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Feb 2010

HCAplus now includes complete International Patent Classification (IPC)
reclassification data for the first quarter of 2010.

CAS Information Use Policies apply and are available at:

http://www.cas.org/legal/infopolicy.html

This file contains CAS Registry Numbers for easy and accurate
substance identification.
'OBI' IS DEFAULT SEARCH FIELD FOR 'HCAPLUS' FILE

=> D STAT QUE L24
L21 592 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON HAYNES J?/AU
L22 225 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON ARRINGTON J?/AU
L24 4 SEA FILE=HCAPLUS SPE=ON ABB=ON PLU=ON L21 AND L22

=> D L24 IBIB ABS HITSTR 1-4

L24 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2006:519843 HCAPLUS Full-text
DOCUMENT NUMBER: 145:416417
TITLE: Potent protective cellular immune responses generated by a DNA vaccine encoding HSV-2 ICP27 and the E. coli heat labile enterotoxin
AUTHOR(S): Haynes, Joel R.; Arrington, Joshua ; Dong, Lichun; Braun, Ralph P.; Payne, Lendon G.
CORPORATE SOURCE: PowderJect Vaccines Inc., Middleton, WI, USA
SOURCE: Vaccine (2006), 24(23), 5016-5026
CODEN: VACCDE; ISSN: 0264-410X
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB A mouse model was employed to evaluate protective cellular immune responses induced

by an immediate early antigen of HSV-2. Particle-mediated DNA vaccination of mice with a DNA plasmid-encoding ICP27 resulted in the induction of ICP27-specific IFN-γ and TNF-α production in Balb/c mice, but little protection to intranasal challenge with wild type HSV-2. However, when the DNA vaccine was supplemented with as little as 50 ng of a vector encoding the A and B subunits of the Escherichia coli heat labile enterotoxin (LT), animals were profoundly protected from morbidity and mortality. The ICP27 + LT-mediated protection was correlated with a large increase in ICP27-specific IFN-γ and TNF-α production but cytokine-specific monoclonal antibody treatment at the time of challenge showed that protection was mediated predominantly by IFN-γ. Furthermore, depletion of T cell subsets prior to infectious challenge demonstrated that removal of either CD8+ or CD4+ T cells impaired protection with CD8+ T cells appearing to play a direct effector role. These data demonstrate that augmented cellular immune responses resulting from LT vector plus antigen vector administration to the skin are biol. significant, leading to enhanced protection against mucosal pathogenic challenge. OS.CITING REF COUNT: 6
THERE ARE 6 CAPLUS RECORDS THAT CITE THIS RECORD
(6 CITINGS)
REFERENCE COUNT: 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2003:678494 HCAPLUS Full-text
DOCUMENT NUMBER: 139:212866
TITLE: Recombinant nucleic acids encoding bacterial ADP-ribosylating exotoxin as adjuvant vectors for vaccine delivery
INVENTOR(S): Haynes, Joel R.; Arrington, Joshua
PATENT ASSIGNEE(S): USA
SOURCE: U.S. Pat. Appl. Publ., 72 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 20030162733	A1	20030828	US 2001-993307		20011126
US 20060019921	A1	20060126	US 2005-179798		20050713
PRIORITY APPLN. INFO.:			US 2000-253381P	P	20001127
			US 2001-993307	B1	20011126

AB Recombinant nucleic acid mols. are described. The mols. have two nucleic acid sequences, wherein the first nucleic acid sequence is a truncated A subunit coding region obtained or derived from a bacterial ADP-ribosylating exotoxin (CT-A), and the second nucleic acid sequence is a truncated B subunit coding region (CT-B). The bacterial ADP-ribosylating exotoxin is a cholera toxin or Escherichia coli heat labile enterotoxin. Vectors and compns. containing these mols. are also described. Methods for enhancing an immune response against an antigen of interest using these recombinant nucleic acid mols. and compns. are also described. Such adjuvant vectors encoding CT-A/CT-B and HBsAg or HIV-1 gp120 or HBsAg/HBcAg were prepared as vaccines with enhanced humoral and cellular immune responses.

L24 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2003:42130 HCAPLUS Full-text
DOCUMENT NUMBER: 138:105624
TITLE: Truncated genes for exotoxins for use as nucleic acid adjuvants in vector vaccines
INVENTOR(S): Haynes, Joel R.; Arrington, Joshua E.
PATENT ASSIGNEE(S): Powderject Vaccines, Inc., USA

SOURCE: PCT Int. Appl., 143 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003004055	A2	20030116	WO 2001-US43151	20011126
WO 2003004055	A3	20031120		
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2429708	A1	20030116	CA 2001-2429708	20011126
AU 2001297988	A1	20030121	AU 2001-297988	20011126
AU 2001297988	B2	20061026		
EP 1379273	A2	20040114	EP 2001-274277	20011126
EP 1379273	B1	20090916		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
CN 1537013	A	20041013	CN 2001-819570	20011126
CN 1317034	C	20070523		
JP 2004536107	T	20041202	JP 2003-510065	20011126
JP 4221289	B2	20090212		
BR 2001015646	A	20051213	BR 2001-15646	20011126
NZ 526175	A	20060127	NZ 2001-526175	20011126
AT 442858	T	20091015	AT 2001-274277	20011126
PT 1379273	E	20091127	PT 2001-274277	20011126
ES 2332261	T3	20100201	ES 2001-274277	20011126
IN 2003CN00798	A	20050415	IN 2003-CN798	20030522
IN 229152	A1	20090320		
MX 2003004638	A	20040420	MX 2003-4638	20030526

PRIORITY APPLN. INFO.: US 2000-724315 A 20001127
WO 2001-US43151 W 20011126

AB Vector vaccines including genes for ADP-ribosylating toxins that act as powerful adjuvants are described. The vector carries an antigen gene and the genes for a truncated A subunit derived from a bacterial ADP-ribosylating exotoxin, and the second nucleic acid sequence is a truncated B subunit coding region. The genes are expressible, but the gene products are not toxic. Toxicity is eliminated from the A subunits by deletion of the C-terminal KDEL or RDEL motif. Vectors and compns. containing these mols. are also described. Methods for enhancing an immune response against an antigen of interest using these recombinant nucleic acid mols. and compns. are also described. Adjuvant activity of cholera toxin and Escherichia coli heat-labile enterotoxin genes is demonstrated in mice.

OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (7 CITINGS)
REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L24 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2002:295134 HCAPLUS Full-text
DOCUMENT NUMBER: 136:384628
TITLE: Plasmid vectors encoding cholera toxin or the

heat-labile enterotoxin from Escherichia coli are strong adjuvants for DNA vaccines

AUTHOR(S): Arrington, Joshua; Braun, Ralph P.; Dong, Lichun; Fuller, Deborah H.; Macklin, Michael D.; Umlauf, Scott W.; Wagner, Sarah J.; Wu, Mary S.; Payne, Lendon G.; Haynes, Joel R.

CORPORATE SOURCE: PowderJect Vaccines, Inc., Madison, WI, 53711, USA

SOURCE: Journal of Virology (2002), 76(9), 4536-4546
CODEN: JOVIAM; ISSN: 0022-538X

PUBLISHER: American Society for Microbiology

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Two plasmid vectors encoding the A and B subunits of cholera toxin (CT) and two addnl. vectors encoding the A and B subunits of the Escherichia coli heat-labile enterotoxin (LT) were evaluated for their ability to serve as genetic adjuvants for particle-mediated DNA vaccines administered to the epidermis of laboratory animals. Both the CT and the LT vectors strongly augmented Th1 cytokine responses (gamma interferon [IFN-γ]) to multiple viral antigens when codelivered with DNA vaccines. In addition, Th2 cytokine responses (interleukin 4 [IL-4]) were also augmented by both sets of vectors, with the effects of the LT vectors on IL-4 responses being more antigen dependent. The activities of both sets of vectors on antibody responses were antigen dependent and ranged from no effect to sharp redns. in the IgG1-to-IgG2a ratios. Overall, the LT vectors exhibited stronger adjuvant effects in terms of T-cell responses than did the CT vectors, and this was correlated with the induction of greater levels of cAMP by the LT vectors following vector transfection into cultured cells. The adjuvant effects observed in vivo were due to the biol. effects of the encoded proteins and not due to CpG motifs in the bacterial genes. Interestingly, the individual LT A and B subunit vectors exhibited partial adjuvant activity that was strongly influenced by the presence or absence of signal peptide coding sequences directing the encoded subunit to either intracellular or extracellular locations. Particle-mediated delivery of either the CT or LT adjuvant vectors in rodents and domestic pigs was well tolerated, suggesting that bacterial toxin-based genetic adjuvants may be a safe and effective strategy to enhance the potency of both prophylactic and therapeutic DNA vaccines for the induction of strong cellular immunity.

OS.CITING REF COUNT: 44 THERE ARE 44 CAPLUS RECORDS THAT CITE THIS RECORD (44 CITINGS)

REFERENCE COUNT: 51 THERE ARE 51 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

SEARCH HISTORY

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                SEL RN

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L3                 STRUCTURE UPLOADED
                   D
L4              0 SEA SSS SAM L3
L5              0 SEA SSS FUL L3
L6            535 SEA SPE=ON  ABB=ON  PLU=ON  C11H15N5O4/MF
L7             20 SEA SPE=ON  ABB=ON  PLU=ON  L6 AND GUANOSINE/BI
                   D SCAN
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L9             50 SEA SSS SAM L8
L10         67307 SEA SSS FUL L8
L11                STRUCTURE UPLOADED
                   D
L12            50 SEA SUB=L10 SSS SAM L11
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                   D
L14             9 SEA SUB=L10 SSS SAM L13
L15                STRUCTURE UPLOADED
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L16             1 SEA SUB=L10 SSS SAM L15
                   D SCAN
L17            24 SEA SUB=L10 SSS FUL L15
                   D SCAN
L18             0 SEA SPE=ON  ABB=ON  PLU=ON  L2 AND L10
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                   E O6-MEDG/CN
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                   D IDE CAN

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L24             4 SEA SPE=ON  ABB=ON  PLU=ON  L21 AND L22

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L26             0 SEA SSS FUL L15
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L29          24 SEA SSS FUL L15
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L31           0 SEA SUB=L29 SSS SAM L3
L32           0 SEA SUB=L29 SSS FUL L3

     FILE 'REGISTRY' ENTERED AT 17:33:28 ON 19 APR 2010

     FILE 'HCAPLUS' ENTERED AT 17:33:32 ON 19 APR 2010
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     FILE 'HCAPLUS' ENTERED AT 17:33:56 ON 19 APR 2010
                D STAT QUE L24
                D L24 IBIB ABS HITSTR 1-4

     FILE 'REGISTRY' ENTERED AT 17:35:03 ON 19 APR 2010
                D STAT QUE L19
                D IDE CAN L19

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L33         152 SEA SPE=ON  ABB=ON  PLU=ON  L19
L34       33522 SEA SPE=ON  ABB=ON  PLU=ON  IMMUNOSTIMULATION+PFT/CT OR
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L35       53933 SEA SPE=ON  ABB=ON  PLU=ON  ANTISENS?/CT OR (ANTI(W)SENS? OR
                ANTISENS?)/BI
L36      152611 SEA SPE=ON  ABB=ON  PLU=ON  OLIGONUCLEOTIDES+OLD,NT,PFT/CT OR
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L37       18678 SEA SPE=ON  ABB=ON  PLU=ON  (CPG? OR C(W)P(W)G?)/BI
L38          18 SEA SPE=ON  ABB=ON  PLU=ON  L33 AND ((L34 OR L35 OR L36 OR
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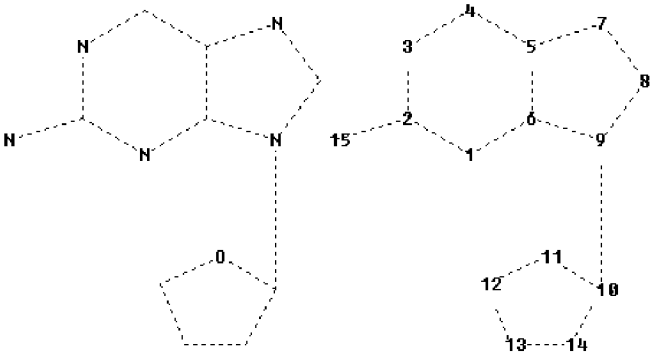


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15
ring nodes :
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chain bonds :
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ring bonds :
1-2 1-6 2-3 3-4 4-5 5-6 5-7 6-9 7-8 8-9 10-11 10-14 11-12 12-13 13-14

exact/norm bonds :
1-2 1-6 2-3 2-15 3-4 4-5 5-6 5-7 6-9 7-8 8-9 9-10 10-11 10-14 11-12
12-13 13-14

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:Atom 14:Atom 15:CLASS

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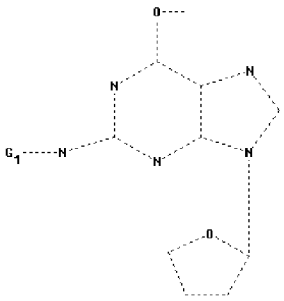

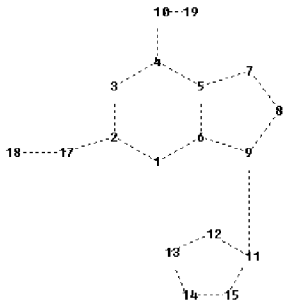

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ring nodes :
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chain bonds :
2-17 4-10 9-11 10-19 17-18
ring bonds :
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exact/norm bonds :
1-2 1-6 2-3 2-17 3-4 4-5 4-10 5-6 5-7 6-9 7-8 8-9 9-11 10-19 11-12
11-15 12-13 13-14 14-15 17-18

G1:n-Bu,i-Bu,s-Bu,t-Bu

Match level :
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:CLASS
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 17:CLASS 18:CLASS 19:CLASS